DOCUMENT RESUME

ED 221 780 CG 016 206

AUTHOR Hetherington, E. Mavis; And Others
TITLE Cognitive Performance, School Behavior, and Achievement of Children from One-Parent Households.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
PUB DATE 81
NOTE 264p.; Prepared for the Families as Educators Team of the National Institute of Education.

EDRS PRICE MF01/PC11 Plus Postage.
DESCRIPTORS *Academic Achievement; Adjustment (to Environment); Behavior Problems; *Children; *Cognitive Ability; *Divorce; Elementary Secondary Education; Family Influence; Family Relationship; Literature Reviews; *One Parent Family; Sex Differences; Stress Variables; *Student Behavior

ABSTRACT

This report reviews the research literature on the effects of divorce and one-parent childrearing on academic achievement and intellectual functioning in children. Life changes following the decision to separate are described along with scholastic achievement measured by IQ and aptitude tests and patterns of cognitive performance. Factors associated with achievement--such as the reason for the single-parent status, siblings, sex and race of the child, and socioeconomic status of the family--are outlined. Social behavior and work patterns are also reviewed. The report concludes with a review of factors that may modify post-divorce stress, including effective family functioning, positive relationships, and support services. An extensive bibliography is appended along with 14 tables that analyze each research study in depth. (Author/JAC)

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COGNITIVE PERFORMANCE, SCHOOL BEHAVIOR AND ACHIEVEMENT OF CHILDREN FROM ONE-PARENT HOUSEHOLDS

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Introduction

The search for psychological and sociocultural antecedents of patterns of achievement has given rise to numerous research studies on the topic over the past years. Since differences in intellectual ability account for only part of the variance associated with academic performance, much energy has been directed at uncovering other causes of poor achievement. Recent trends in marital dissolution and the growing numbers of children living in one-parent households have led researchers to focus particular attention on the impact of family disruption on children's academic functioning.

Demographers project that at least one-third and perhaps nearly one-half of all children born in 1979 will spend some portion of their lives prior to age 18 in a one-parent household (Bumpass & Rindfuss, 1978; Glick, 1979). Trends in divorce are the major contributor to the volume of one-parent homes and to the increased likelihood that a child will encounter the departure of one parent from the household at some time in his or her life. In 1960, nearly one-half of all children in one-parent families lived with a divorced or separated parent, whereas in 1980, nearly two-thirds of them did.

Although the social and psychological implications of rearing children in one-parent households are not fully understood, numerous reports have been written to suggest a relationship between depressed achievement and parental divorce. This report is intended to summarize and reanalyze research on the effects of divorce and one-parent family environments on children's intellectual functioning and academic achievement.

What do we know about the effects of parental divorce on academic performance and achievement behavior? What are the sociocultural variations in family life after divorce that mediate the effects on children's cognitive functioning? Parents, educators and professionals working with families in transition need information about the effects of divorce that has been verified through rigorous research. Attempts to provide answers to these questions have been limited

severely by the use of inadequate research designs and methods that fail to take into account the complex changing patterns of family life surrounding divorce. It is our intent in this report to describe the experience of separation and divorce particularly as it relates to parents and children and to review research to date that has examined the relationship between one-parent rearing and intellectual functioning of children.

In this report, we have reviewed the effects of divorce and life in a one-parent household on scholastic and career achievements. Whenever possible, we have attempted to focus on one-parent households that have resulted from separation or divorce. Since much of the literature does not identify the reasons for one-parent home status, we have had to include studies where reasons for absence are not specified.

Our review uses a generic definition of achievement that includes two aspects. The first is a set of behaviors or performance in roles or settings that are achievement-related. Examples of these are scores on intelligence and aptitude tests, teacher-assigned grades and grade-point averages. The second referent of achievement is the attainment of positions or social roles that are subject to social evaluation by peers. An example of this definition is the amount of or level of education a person completes. Our review focuses on both types of achievement and includes a review of learning and social conditions that may affect achievement-related performance.

In the search for relevant studies, we have reviewed empirical and descriptive work found in journal articles, unpublished research reports, and dissertations. We have included studies that report both significant and nonsignificant results. Since sample sizes and effect sizes usually are small,

the power of statistical tests in determining the presence of an effect in most studies is low. We have attempted to reduce the distortion that results in reporting conclusions on studies that yield only significant findings by conducting a synthesis analysis of all available studies.

Limitations to Previous Research

Early research in the area of family disruption focused on the effects of "father absence" on children. This conceptualization of one-parent households as father absent households was due in part to the large numbers of one-parent homes headed by women and to the influence of psychoanalytic theories that stressed the importance of fathers in the development of children's sex roles and behavior. Little attention was paid to variations in individual or cultural factors or variations in the life experiences and family interactions of members of one-parent households that could modify the outcomes of divorce.

Research on the effects of parental separation on achievement is plagued by methodological problems. These have been identified in previous reviews of father-absent literature (Hetherington, Cox, & Cox, 1978a, Herzog & Sudia, 1973; Sinn, 1978). Primary among the problems is the failure to identify the reasons for parental separation, whether it be due to death, divorce, or desertion. Factors such as sex, age, and developmental status of the child at the onset of separation, as well as the length of separation, or presence of significant other parent figures frequently are not specified in the designs of these studies. Although socioeconomic status, race, and parental educational levels are known correlates of academic achievement, much of the research on divorce fails to control or account for the variance associated with these factors. For example, often the effects of parental separation are confounded with lowered

income status of the family so that it is difficult to determine if adverse effects are due to divorce, living in a household with only one adult, or to reduced financial security.

Sampling procedures used in research designs pose additional problems in interpreting and generalizing results from studies. Individuals may be selected from clinic populations that are not representative of the total range of divorced families since not all families in which parents divorce seek clinical assistance. Samples drawn from different periods or on the basis of duration of living in a one-parent household also are subject to tendencies to distort and misrepresent the social demographic character of divorce. For example, the contemporary context of research on children's experiences of divorce is different from the 1960's. Reasons for living in one-parent families have changed as have the characteristics of children who encounter this form of family life. Given these distortions, it is inaccurate and misleading to generalize sizes of statistical relationships or "effects" from these studies to all one-parent families.

Another limitation to existing knowledge of the effects of divorce stems from the tradition of exclusive focus on comparing group means. This procedure has led to a distorted and simplistic view of divorce and the one-parent family structure. There is great variability in the responses of adults and children to divorce and to life in a single-parent household. These variations need to be examined in relation to other conditions within the family, changes in economic status, stages of parents in the family life cycle, alterations in parent child relations, and availability of other support systems in the family and child's social environment. Simple comparisons of academic performance of children in divorced and non-divorced households have yielded little information on the intrafamilial and extrafamilial conditions that mediate the

effects on children. Furthermore, in few instances are intraindividual changes in cognitive performance assesed within groups of children exposed to either one-parent or two-parent family circumstances. Nearly all the longitudinal research is confined to a comparison of interindividual differences among those reared in intact versus one-parent arrangements.

Finally, there are serious limitations to the criteria used to assess achievement outcomes. In general, performance on standardized tests, teacher-assigned grades and ratings of achievement-related behaviors are used to indicate level of intellectual functioning. While these measures provide information on the immediate aspects of cognitive functioning, there are aspects to the concept of achievement, such as educational attainment and occupational status, that provide other measures of an individual's success or failure in adult life. Tests and ratings of achievement or intellectual ability are only one index of performance and should not be used as sole indicators of success or failure.

Our discussion of the limitations of research in this area is by no means exhaustive, but is intended to serve as a guide for the reader in evaluating studies of the effects of divorce and life in a one-parent household on children's achievement. A more complete list of dimensions of methodological adequacy is included in Table 1. In our review of literature, it will be seen that few studies control or employ more than one or two of these dimensions. The inadequacies of methods used in family research coupled with changing social contexts of family disruption have contributed to the apparently noncumulative nature of "findings" and to the inability of researchers to derive consistent and replicable conclusions.

(Insert Table 1)

A Social-Psychological Model of Divorce and Achievement

In this paper an attempt will be made to develop a comprehensive social-psychological mode of the effects of divorce and one-parent family environments on achievement behavior. Economic and sociological contexts of family life after divorce and the interactional family processes that may be linked to achievement behavior will be described. Obviously, not all literature linking achievement to home or social contexts can be reviewed in this chapter. There is an extensive literature for which recent reviews are available (Spenner & Featherman, 1978; Ruble & Boggiano, 1980; Featherman, 1980). We have focused on achievement studies that appear to be related to the structural and functional aspects of family life in divorced one-parent households.

Our conceptualization of the impact of divorce is based on the notion that divorce is not a single event, but a process involving a sequence of changes in life curcumstances extending over a period of many years. At different points in this sequence, children and parents will be confronted with different stresses and adaptive tasks. Our review includes a summary of the qualitative conditions of family life after divorce.

The Experience of Separation and Divorce for Adults

The dissolution of marriage and transition to a new family life involves considerable personal and emotional disorganization and stress for all family members. Most theories of divorce propose that divorce is a life transition involving a series of stages in which certain emotional and social problems must be solved (Bohannan, 1970; Goode, 1956; Hetherington, 1981; Hetherington, Cox, & Cox, 1978b, 1981; Krantzler, 1973; Smart, 1977; Wallerstein & Kelly, 1980;

Waller, 1967; Weiss, 1975; Wiseman, 1975). Almost all models of divorce are based on crisis theory and include several common stages. An initial stage of alienation and conflict is associated with disruption in family functioning and the decision to divorce. This is followed by a stage of family and personal disequilibrium when separation first occurs and family members begin to adjust to new roles, tasks, and identity changes. Finally, a stage of reorganization emerges which involves an acceptance of the divorce and reorientation of identity.

In the period immediately preceding and following divorce, separated adults frequently report feelings of loneliness, guilt, depression, anger, rejection, helplessness, frustrated dependency, incompetence, and lowered self-esteem (Hetherington, Cox,& Cox, 1978b; Hunt, 1966; Goode, 1956; Waller, 1967; Wallerstein & Kelly, 1980; Weiss, 1975). Symptoms that frequently accompany the trauma of divorce include the inability to work effectively, sleeplessness, lethargy, poor health, weight changes, and increased smoking, drinking and drug use (Goode, 1956; Hunt, 1966; Waller, 1967).

Perhaps because he usually leaves the home and suffers the trauma of separation from children, the divorced father seems to undergo greater initial changes in self-concept and reports more emotional distress than do women (Fulton, 1978; Hetherington, Cox, & Cox, 1978b; Kitson & Sussman, 1976; Chiraboga & Cutler, 1977). Divorced fathers complain of not knowing who they are, being rootless, isolated, and having no structure in their lives. Divorced mothers complain of feeling physically unattractive and having lost the identity and status associated with being a married woman (Hetherington, Cox,& Cox, 1978b).

The emotional problems of custodial parents are particularly important in determining adjustment of children in single-parent homes (Hetherington, Cox & Cox, 1979a; McCord, McCord,& Thurber, 1962). Children of depressed, anxious, or dissatisfied mothers are more likely to feel rejected and unhappy

(Zill, 1978). Since divorced mothers are more likely to be emotionally distressed than are married mothers (Briscoe et al., 1973; Guttentag & Salasin, 1979; Hetherington, 1972; Hetherington, Cox, & Cox, 1979a; Pearlin & Johnson, 1977), children in divorced families are at increased risk of encountering parent-child relationships associated with adverse emotional outcomes.

The Experience of Parental Separation and Divorce for Children

Studies that have examined the responses of children in the immediate period surrounding separation and divorce have usually found indicators of emotional distress such as fearfulness, inhibition, habit disturbances and neediness (Fulton, 1978; Hess & Camara, 1979; Hetherington, Cox, & Cox, 1979b; Kelly & Wallerstein, 1976; Wallerstein & Kelly, 1974, 1975, 1976, 1980). Although divorce may be the best solution to a destructive family relationship and may offer the child an escape from one set of stresses, almost all children experience the transition of divorce as painful (Camara, 1979; Fulton, 1978; Hetherington, Cox, & Cox, 1979a, 1979b, 1981; Wallerstein & Kelly, 1979; Weiss, 1975). Even children who are later able to recognize the constructive outcomes of the divorce initially undergo considerable emotional distress with family dissolution. The most common early responses of children to divorce are anger, fear, depression and guilt. It is not usually until after the first year following divorce that there appears a reduction in tension and emergence of a sense of well-being.

As with adults, there is a wide variability in the quality and intensity of responses and adaptation of children to divorce. Some children exhibit severe or sustained disruptions in development; others seem to move easily through a turbulent divorce and emerge as competent well-functioning individuals. Although there is increasing interest in the relative vulnerability of children to psychosocial stress (Garmezy, 1975; Rutter, 1979a, 1979b, this issue has not been explored systematically in relation to divorce. It seems likely

that temperament, the past experience of the child, and the child's developmental status all contribute to individual differences in coping with family disruption. Temperamentally difficult children have been found to be less adaptable to change and more vulnerable to adversity (Chess, Thomas, & Birch, 1968; Rutter & George, 1973; Rutter, 1979a, 1979b) than are temperamentally easy children.

There is also evidence that children who have been exposed to chronic stress or several concurrent stresses may be at appreciable psychiatric risk compared to children who experience only a single stressful event (Rutter, 1979b). Extrafamilial factors such as stresses and supports offered by others, the quality of housing, availability of child care, need for the custodial parent to work, economic status and residential mobility will moderate or potentiate stresses associated with divorce (Coletta, 1978; Hodges, Wechsler, & Ballantine, 1978).

The adaptation of the child also varies with his or her developmental status. The limited cognitive and social competencies of the young child and the child's dependence on parents is associated with different responses than those of the more mature and self-sufficient older child who has available a wider variety of social supports. Pervasive sadness, depression, loneliness and anger seem to be the most common emotions experienced by children of all ages around the time of separation (Wallerstein & Kelly, 1978).

The young child, compared to the older child, is less able to appraise accurately the divorce situation, the motives and feelings of parents, or his or her own role in the divorce. The egocentrism and restricted cognitive and social skills lead the young child to be more self-blaming in interpreting the cause of divorce and to distort perceptions of the parents' emotions and behavior (Wallerstein & Kelly, 1974, 1975; Tessman, 1978). In addition, regressive behavior, irritability and anxiety seem most common in preschool

children, and dramatic increases in aggressive and destructive behavior, particularly in young boys, are often observed (McDermott, 1968, 1970; Hetherington, Cox, & Cox, 1979a). Although latency-aged children are distressed and depressed at separation, they are better able to be sympathetic to the difficulties experienced by their parents.

Most adolescents experience considerable pain and anger when their parents divorce; however, when the immediate trauma of divorce has passed, they are able to assign accurately responsibility for the divorce, to resolve loyalty conflicts, and to assess and cope with economic and other practical exigencies (Wallerstein & Kelly, 1974, 1975). This is often accompanied by premature disengagement from the family. However, adolescents more than younger children do have the option to seek support elsewhere if the home situation is particularly painful.

The age status of children is important not only in relation to variations in cognitive and social competencies, but also because of the increased salience of social networks outside the family for older children. For the young child, stress and turmoil in the family is inescapable; disruptions in parent-child relations may undermine the only important bonds in a child's life. Older children spend much time in other social settings - the neighborhood, the school, the church, and for some adolescents, the work situation. Thus, older children have more opportunities to find support systems outside the home that may mitigate deleterious effects of divorce.

In this discussion of the developmental status of the child and the response to divorce, heavy reliance has been placed on the findings of the Wallerstein and Kelly (1980) study since this is the only longitudinal study that has examined changes in response to separation of children of different ages. This study is a sensitive clinical study and is one of the most fruitful sources of hypotheses in the field; however, its methodological shortcomings make

interpretation of its findings difficult. There is no non-divorced family comparison group and information on methodological and statistical procedures are not presented in enough detail to be able to evaluate the study. However, support for the findings in the emotional responses of preschool children is found in the Hetherington, Cox and Cox (1978) study which included a well-matched non-divorced family comparison group.

A crisis model of divorce may be most appropriate in conceptualizing the short-term effects of divorce on children. In the period surrounding the divorce of parents, children may be responding to changes in their family life -- the loss of a parent, marital discord, family disorganization, and changes in parent-child relations associated with temporary distress and emotional neediness of family members, and to other real or imagined threats to the well-being of the child elicited by the uncertainty of the situation.

The research evidence suggests that most children can cope and adapt to the short-term crisis of divorce within a few years. However, if the crisis is compounded by multiple stresses and continued adversity, disruptions in development may occur.

The long-term adjustment of children is more likely to be related to sustained conditions associated with the quality of life after separation in a household with only one parent. Those include: changes in family functioning increased salience of the custodial parent, and lack of availability of the noncustodial parent, and the presence of fewer adults in the household to participate in decision-making, to assume responsibility for household and child care tasks, and to serve as models and socialization agents to help children learn effective work and play skills.

For most children, within five years of divorce, there is also a later period of reentry into a two-parent family involving a stepparent. It is

important to recognize that the point at which we tap into the sequence of events and changing processes associated with divorce will modify our view of the adjustment of children to divorce and the factors that influence that adjustment.

Family Life After Divorce

In going through the dissolution of marriage and adapting to life in a one-parent household, there are changes and problems in family life with which each family member must cope. The main areas in which transition and stress are experienced are in the practical problems of everyday living, and in the changes that take place in family functioning and parent-child interaction.

Practical Problems of Everyday Living

The practical problems of family life after divorce can be grouped into two clusters, those associated with economic changes and those associated with changing family roles and responsibilities.

Economic changes. Some of the most pervasive stresses confronting members of divorcing families are those associated with finances and downward economic mobility. Divorce and separation are associated with a marked drop in income for women, as much as thirty percent (Hoffman, 1977). Although divorce results in reduced income for women, it does not for most men (Bane, 1976; Hoffman & Holmes, 1976 Hoffman, 1979). This is in part attributable to the fact that less than one-third of ex-husbands contribute to the support of their families (Kriesberg, 1970; Winston & Forsher, 1971). Also, since divorced women typically retain custody of children, the women's income to needs ratio is effectively lower at each income level. It should be noted that fathers' financial statuses are in fact less adversely affected by divorce even among those who continue to pay child support or alimony.

The downward economic mobility of mother-headed families after divorce may entail a return to work and reduced contact between a working mother and

children, a lower standard of living, relocation into a combined household, usually with the mother's family of origin, and shifts to more modest housing in poorer neighborhoods (Brandwein, Brown,& Fox, 1972). Research on the effects of maternal employment suggests that if a divorced mother works and if adequate provisions are made for child care and household maintenance, maternal employment may have no adverse effects on children (Hetherington, Cox, & Cox, 1978b). However a recent study by Coletta (1978) shows that a substantial number of mothers in low income but not in moderate income one-parent families experience stress in coordinating their roles as mothers and employees. Greater task overload is experienced by working, divorced mothers of young children. Furthermore, if the mother begins to work at the time of divorce or shortly thereafter, preschool children seem to experience the loss of both parents which is reflected in a higher rate of behavior disturbances (Hetherington, Cox,& Cox, 1978b).

Relocation is experienced by most people as a psychological stress (Weissman & Paykel, 1972). For children, moving means not only loss of friends, neighbors and a familiar educational setting, but also greater contact with delinquency, fewer recreational facilities, and inadequate schools. Each of these factors may affect the child's academic functioning since the child is likely to experience reduced contact with a parent who might otherwise offer encouragement and assistance in school related work, and a deprived educational environment with few enriching resources and experiences.

Changing family roles and responsibilities. Divorce means assuming new roles and responsibilities. Many divorced women feel that they have neither the time nor the energy to deal competently with routine financial tasks, household maintenance, child care and occupational or social demands. When a single parent undertakes the tasks usually accomplished by two parents and

other support systems are not available, the burden can be mammoth. This is particularly true in families with more than one child and in families with young children.

The task overload experienced by the divorced mother is sometimes associated with family disorganization where roles and responsibilities are not well delineated and many routine chores do not get accomplished. Low-income mothers in one-parent families, even with preschool children, are likely to expect more independence and help from their children than do middle-class mothers (Coletta, 1978). Children of many divorced parents receive less adult attention, are more likely to have erratic meals and bedtimes and to be late for school (Hetherington, Cox, & Cox, 1978b). In addition, playful interactions associated with caretaking such as bathing, eating, or reading to children at bedtime are less likely to be prolonged. With school-aged children, task overload may be associated with early assignment of responsibilities to children (Weiss, 1978).

When fathers have custody of children, they report many of the same feelings of being overburdened that are found in custodial mothers (Ferri, 1976; George & Wilding, 1972; Spanier & Castro, 1979). However, men are more likely to be helped in household tasks by female friends or relatives or a paid housekeeper (Brandwein, Brown, & Fox, 1974; Hetherington, Cox & Cox, 1978b).

Family Functioning and Parent-Child Interaction

It has been proposed that one of the ways in which divorce or life in a one-parent family can affect the development of children is through changes in parent-child relations. Recent studies of one-parent families have focused on qualitative changes in the family after divorce including the effects of the loss or unavailability of the father, conflict between parents, and the effects of parent-child relations on children's adjustment.

Loss or relative unavailability of the father. Since mothers generally gain custody of children, most children are confronted with loss or relative unavailability of the father following divorce. Although some fathers increase the frequency of their contacts with their children in the period immediately following divorce, in most families contacts rapidly decrease over time (Hetherington, Cox & Cox, 1978b; Wallerstein & Kelly, 1979). Fathers maintain more frequent contacts with sons than daughters, visits with boys are for longer duration than those with girls, and fathers are more likely to continue child support payments when they have sons (Hess & Camara, 1979; Hetherington, Cox, & Cox, 1978b, 1981).

Most children wish to maintain contact with the father; and in preschool children's fantasies of reconciliation may continue for several years (Wallerstein & Kelly, 1975; Hetherington, Cox, & Cox, 1978; Tessman, 1978). Unless the father is extremely poorly adjusted, or there is continued intense child-involved conflict between parents, availability of the father is associated with positive adjustment especially in boys (Hess & Camara, 1979; Hetherington, Cox, & Cox, 1978; Wallerstein, 1978; Westman et al., 1970).

Fathers may have a relatively unique contribution to make to family functioning and the development of the child. Some of the roles fathers play as parents are indirect and serve to support the mother in her role. The father in the nuclear family indirectly supports the mothers in a number of ways -- with economic aid, with assistance, and relieved time in household and childrearing tasks, and with support and encouragement and appreciation of her performance as a mother. In nuclear families high mother-child involvement and sensitive, competent, affectionate mother-infant relationships have been found when fathers are supportive of mothers (Pedersen, Anderson & Cain, 1977; Feiring & Taylor, 1977). Similarly, a mutually

supportive relationship between parents and involvement of the father with the child has been found to be the most effective support for preschool children and their divorced mothers (Hetherington et al., 1978). . .

The father may also have a direct and active role in shaping the child's behavior through discipline, direct tuition or by acting as a model. For example, in both divorced and nuclear families, children are more likely to obey fathers than mothers (Hetherington, Cox, & Cox, 1978). A mother and father are likely to exhibit wider ranging interests, skills and attributes than a single parent (Pedersen, Rubenstein, & Yarrow, 1978). Finally, one parent can serve as a protective buffer between the other parent and child in a nuclear family. In a nuclear family a loving, competent, or well-adjusted parent can help counteract the effects of a rejecting, incompetent or emotionally unstable parent (Hetherington, Cox, & Cox, 1979a; Rutter, 1979a). When the father is not available in a single-parent mother-headed family, the constructive and pathogenic behaviors of a divorced mother are funneled more directly on the child and the quality of the mother-child relationship is more directly reflected in the adjustment of the child than it is in a nuclear family (Hetherington, Cox, & Cox, 1979a, 1981).

Conflict. Children who are exposed to parental quarreling, mutual denigration and recrimination are placed in a situation of conflicting loyalties. This may result in demands for a decision to reject one parent. The vast majority of children wish to maintain relations with both parents and are unable or unprepared to reject one parent over another. Conflict between parents also gives children the opportunity to play one parent against the other and in some children to develop exploitative manipulative skills (Tessman, 1978; Wallerstein, 1978; Westman et al., 1970).

Research findings are consistent in showing that children in single-parent families function more adequately than children in conflict-ridden nuclear families (Hetherington, Cox and Cox, 1979a; McCord, McCord and Zola, 1958; Nye, 1957; Rutter, 1971, 1979a). The eventual escape from conflict may be one of the most positive outcomes of divorce for children. However, children in divorced families where there is continuing conflict and resentment between parents several years after divorce are even more severely disturbed than are children in conflictful nuclear families (Hetherington, Cox and Cox, 1981).

Parent-child relations. Most studies report some stress or alterations in parent-child relations during the crisis period of separation and divorce (Hetherington, Cox and Cox, 1978; McDermott, 1970; Tessman, 1978; Wallerstein and Kelly, 1979; Weiss, 1975). How long such effects endure is not clear. In the period immediately surrounding separation and divorce, parents are often preoccupied with their own depression, anger and emotional neediness and may be unable to respond sensitively to the wants of the child. Two longitudinal studies of divorce suggest that there may be a period where parent-child relations deteriorate markedly following separation (Hetherington, Cox and Cox, 1981; Wallerstein and Kelly, 1980).

It is important to note that the relationship with the custodial mother and non-custodial father differs, and the parent-child relationship varies with the age and sex of the child. With young children in the first year following divorce, divorced parents communicate less well with their children, make fewer maturity demands and are less affectionate than parents in nuclear families. Divorced mothers and sons are particularly likley to get involved in escalating cycles of conflict and coercion. Greater use of restrictive, power assertive disciplinary methods (Coletta, 1979; Kriesberg, 1970; Phelps, 1969) and negative sanctions (Burgess, 1978, Hetherington, 1972) has been noted in mothers in one-parent families.

On the other hand, divorced mothers are likely to rely on their children for emotional support and assistance with practical problems of daily life (Wallerstein & Kelly, 1979; Weiss, 1979). Greater participation in family decision making and responsibility for household tasks leads to accelerated self-sufficiency (Weiss, 1979), but can also lead to feelings of being overwhelmed and feelings of resentment about the lack of support and unavailability of mothers (Kelly, 1978; Wallerstein, 1978).

Divorced fathers become increasingly less available to their children, particularly their daughters. After divorce most fathers wish to minimize the dissension in contacts with their children and begin by being indulgent and permissive, but gradually increase in restrictiveness with time (Hetherington, Cox,& Cox, 1978).

Although almost all studies of parent-child relations in one-parent families have been done on mother-headed families, a few studies of fathers with custody report some of the same concerns expressed by mothers in one-parent families: homemaking, setting schedules, responding to children's emotional needs, and supervision of children (Gasser & Taylor, 1976; George & Wilding, 1972; Mendes, 1976; Orthner, Brown,& Ferguson, 1976; Schlesinger & Fordres, 1976). In addition a recent study by Santrock and Warshak (1979) reports that family relations and the adjustment of children are better following divorce if children are living with a parent of the same sex.

Achievement, Divorce and One-Parent Households: A Critical Strategy

Research on the development of achievement in children in two parent households suggests that high achievement, leadership, social confidence and assertiveness in children are related to authoritative control and demands for mature independent behavior by warm involved parents. The pattern and relative salience of these factors varies for boys and girls. Girls achievement in contrast to boys benefits from moderate rather than high levels of parental warmth, whereas paternal availabili-

and control is more important for boys (see Dweck, 1982; Huston, 1982; Ruble and Boggiano, 1980; for recent reviews of this literature).

There are few studies that deal directly with the relation between family functioning and achievement following divorce. Since the life experiences and family interaction differs in divorced and non divorced families it seems possible that different family process factors will contribute to the achievement of children in one and two parent households. Some of the conditions of family life that shape achievement outcomes may be relatively direct. The increased responsibilities and decreased availability of custodial and non-custodial parents to participate in educational activities, such as reading to children or attending school functions, may also result in decreased emphasis on school-related performance and fewer opportunities for engaging in learning activities outside the school. Depressed income can also mean fewer resources, both educational and social, that are made available to children. These include the quality of the available educational system, purchase of books, participation in school field trips, or participation in summer or other supplemental educational programs. Other factors may be less direct and may be related to changes in motivation, social adjustment, self concept, personality and the attitudes of others which are associated with divorce.

In this section, we will review the effects of divorce and life in a one parent household on scholastic and career achievements. Wherever possible, we have attempted to focus on one-parent households resulting from separation or divorce. Since much of the literature does not separate the reasons for one-parent home status, we have had to include studies where reasons for absence are not specified.

Our generic definition of achievement includes two aspects. The first is a set of behaviors or performance in roles and settings that are achievement-related. Examples of these are scores on intelligence and aptitude tests, teacher-assigned grades and grade-point averages. The second referent of

achievement is the attainment of positions or social roles that are subject to social evaluation by peers. An example of this definition is the amount of or level of education a person completes. Our review focuses on both types of achievement and includes a review of learning and social conditions that may affect achievement related performance.

In our search for relevant studies, we have reviewed empirical and descriptive work found in journal articles, unpublished research reports, and dissertations. We have included studies that report both significant and nonsignificant results. Since sample sizes and effect sizes are usually small, the power of statistical tests in determining the presence of an effect in most studies is generally low. The procedure of reviewing studies that yield only significant results can distort the conclusions drawn from data (Lane & Dunlap, 1978).

Recently, alernative approaches to the synthesis of research studies other than the usual counting of studies reporting statistically significant results have been developed. Glass (1978) describes a procedure for calculating an effect size for each study and combining these to produce an overall estimate of effect size. Such a procedure requires access to group means, standard deviations, and other descriptive data for each research study.

The method we have selected for combining results when complete data on means and standard deviations are not available is a "sign count" procedure (Hedges & Olkin, 1980). This method involves a tally of studies in which the target group mean is different from the control group mean although this difference may not be reported as a significant difference. Studies are grouped into positive difference, negative difference, or no difference categories.

In our review after each study was analyzed and the direction of effects noted, results (signs) were tabulated. When there was a sufficient number of studies on a particular dimension, a sign test (Siegel, 1956) was used to

determine whether there was a significant number of studies reporting positive differences compared to those reporting negative differences or no differences.

The conclusions we reach must be stated as provisional. Research on the connection of family structure to achievement — especially in the case of one-parent families — continues to be flawed in design and execution. As we discuss and categorize studies, the reader should not presume that studies are without methodological faults.

Scholastic Achievement and Intellectual Functioning Measured by Standardized Tests

Most studies of the effects of one-parent rearing on children's intellectual functioning have used intelligence tests or standardized tests of achievement as indices of academic performance. Both types of tests offer useful information with which to describe scholastic achievement. In general, intelligence or aptitude tests measure general abilities or aptitudes that are predictive of future achievement. The Scholastic Aptitude Test (SAT) or American College Entrance Examination (ACE) are examples of fairly valid and reliable tests of academic potential. Individuals who score high on these tests tend to receive superior grades in college, whereas individuals who score low tend to receive lower grades.

Achievement tests generally are thought to be measures of an individual's past performance or prior achievement. However, as Snow (1980) writes, "information on past or present achievement might indeed be an indicant of present state (aptitude), and as such, a predictor of future achievement" (1980: 42). Many schools use some form of achievement test to assess learning of basic skills or knowledge. Some examples of achievement tests used in studies of differential effects of family structure are: The California Achievement Test, The Iowa Test of Basic Skills, The Metropolitan Achievement Tests, the Stanford Achievement Tests, and the Science Research Associates Achievement Series.

The advantages of using standardized measures is that they have been statistically refined so that information on their reliability and validity is available. In addition, these tests provide normative information on an individual's performance. However, there are some important limitations to the use of test scores as a sole measure of individual or group academic functioning. First, while it is true that these tests have high predictability for academic success based on a total population, the tests are not necessarily predictive of the academic performance of an individual or subset of a population. For example, scores on these tests are not highly correlated with success in college of individuals who are black or who have Spanish surnames (Green & Farquar, 1965; Baldwin & Levin, 1970: Goldman & Richards, 1974; Hedges & Majer, 1974). The specific predictive validity of such tests for children reared in one-parent homes is unknown.

There are data to support the notion that scores on intelligence or aptitude test that are normally stable may fluctuate during times of disturbance in the lives of those being tested. However, no longitudinal studies have examined intraindividual shifts of intellectual performance among children experiencing parental loss; few studies have identified or taken into account the time at which separation occurred. In general, most studies have grouped children together cross-sectionally on the basis of a father-absent or one-parent status with little attention paid to the time, onset or duration of one-parent status. Children who are in the midst of family disruption are mixed with those who experienced a change in their family lives several years before

they participated in a research study. This approach makes it impossible to detect temporary changes in intellectual functioning or test performance due to stress experiences in family lives and those that are due to family conditions related to long periods of one-parent rearing.

Studies of the effects of family disruption and one-parent rearing on children's academic functioning measured by standardized tests are summarized in Table 2. For the analysis in this report these studies were divided into three areas: those that measure performance based on I.Q. or aptitude tests, those that measure overall performance or total scores on tests of achievement, and those that examine patterns of intellectual performance relating to quantitative-verbal differences or analytic and divergent thinking styles.

(Insert Table 2)

I.Q. and Aptitude Tests

Thirty studies using a measure of I.Q. or aptitude in the study of differences in intellectual performance based on family structure were identified. The results of the synthesis of research are presented in Table 3. The ages of subjects in these studies range from infancy to college-age. Seventeen of these studies focused on preschool and elementary school children; five of these studies extended to junior high age students. Eleven included junior or senior high students; six studies are based on college-age or high-school graduate samples. Only one study explored cognitive functioning in infants from mother-headed homes. One-third of the studies gathered data from working-class or lower-income families and another third of the studies used a mixture of lower and middle-income families. Only two studies reported using a middle or upper-middle income group; eight studies failed to report the socioeconomic backgrounds of the families.

(Insert Table 3)

The studies vary in the racial backgrounds of participants with seven studies using a mixed sample of black and white subjects, eight studies using a sample of black subjects and three studies using a sample of white subjects. Twelve studies failed to identify the racial or ethnic backgrounds of families. A majority of the studies (23) used mixed groups of male and female children or students; six studied males exclusively. Only one investigation studied females exclusively.

Looking at directional differences (and not just statistically significant differences) between the means of scores of those in one- and two-parent family groups, we find 19 of the 30 studies report that children from one-parent homes receive lower scores on I.Q. and aptitude tests than do children in two-parent homes. Two studies reported reverse findings one found no differences between groups; and three studies that reported only significant results found no significant differences between groups. Five studies reported mixed findings depending on variables related to one-parent status, such as the time and duration of father-absence, sex of the child, or presence of a father surrogate or siblings. Further discussion of these studies generally will be restricted to studies that have made some effort to use adequate methodological controls, namely, the use of comparison groups of two-parent families and attempts to match subjects on sociocultural background or the selection of subjects from homogeneous backgrounds.

Similar trends are found when the different age, racial and socio-economic groups represented in the studies are examined, although differences are less marked for older age groups studied. For example, using age of the child as an organizing factor for analyzing the results of studies, we find that the studies of preschool and infant children (Broman, Nichols and

Kennedy, 1975; Hetherington et al., 1979a; Illardi, 1966; Pedersen, Rubenstein, & Yarrow, 1973; Willerman, Naylor,& Myrianthopolous, 1970) consistently report depressed test scores for children in one-parent homes. Broman, Nichols, Kennedy (1975) studied 26,094 white and black four-year-old children from father-present and father-absent homes matched on race, sex and socioeconomic status. The authors found significant differences between mean I.Q. scores of children in family groups, particularly for white children, although the effects were no longer significant after socioeconomic status and mother's educational level were taken into account. Differences were found between I.Q. scores of one-and two-parent groups of black four-year-old children from lower-income families (Illardi, 1966) and for four-year-old children from interracial matings (Willerman et al., 1970). Hetherington et al., (1979a) reported significant differences in the I.Q. scores of preschool children from divorced and non-divorced middle-income white families at two years following the divorce. Pedersen et al., (1973) reported differences for father-absent males compared to father-present children although the differences were significantly only for black 5-6 month old infants.

Eight of the thirteen studies of elementary-school-aged children reported lower scores on intelligence tests of groups of children from one-parent homes compared to those from two-parent homes (Collins, 1970; Cortes,& Fleming, 1968; Deutsch & Brown, 1964; Douglas, Ross, & Simpson, 1968; Edwards & Thompson, 1971; Hess, Shipman, Brophy, Bear,& Adelburger, 1969; Rees & Palmer, 1970; Soloman et al., 1972).

Six studies of the eleven that included children of junior high school or high school age found differences between scores of children in family groups (Collins, 1970; Douglas et al., 1968; Feldman & Feldman, 1975; Jaffe, 1966; Stetler, 1959; Sutherland, 1930); three studies obtained mixed results (Maxwell, 1971; Lessing et al., 1970; Kandal, 1971); one study reporting only significant results found no difference between groups

(Wilson, 1967). Findings for college-age students are less clear-cut. Only two studies reported depressed scores on aptitude tests for students in one-parent homes (Sutton-Smith, Rosenberg & Landy, 1968; Thomas, 1969). Chapman (1977) obtained mixed findings; Carlsmith (1973) and Nielson (1971) found no differences between family groups on aptitude, and Oshman (1975) reported higher scores for females in father-absent families.

Although a large number of studies have yielded differences in mean scores of students from one-and two-parent homes, it should be noted that these differences are usually small, ranging from less than one point to seven points difference between the group mean scores on I.Q. tests. In the general population, the standard deviation of I.Q's is about 15 points. By that criterion of variation the effect of one-parent rearing is very slight. Further, several studies have reported that the differences are decreased when socioeconomic status is taken into account (Broman, Nichols & Kennedy, 1975; Deutsch & Brown, 1964; Wilson, 1967).

Achievement Tests

Eleven studies that examined differences in overall or total scores for tests of achievement were identified. The results of the research synthesis are presented in Table 4. Studies of achievement that have focused on specific abilities, such as verbal or quantitative performance, will be discussed in the section on patterns of cognitive functioning.

Of the eleven studies using measures of standardized achievement, six used samples of elementary school children and five used junior or senior high school children. All but two of the studies included both boys and girls in the sample; the two remaining studies focused only on boys' performance. Five of the studies investigated lower-income familes; three included mixed

SES groups, and three reports of studies did not include information on the social class backgrounds of families. Only one study focused primarily on white students; four studies used samples of black children; one study contained a mix of racial and ethnic groups. Five studies did not provide information on the racial and ethnic backgrounds of participants.

The results of the synthesis of research are presented in Table 4. Of the eleven studies on achievement, seven reported differences between test scores of groups of children from one- and two-parent homes. Children from one-parent homes received lower scores on standardized tests of achievement than did children from two-parent homes. Three studies that reported only significant results showed no differences between groups; one study found that children in the one-parent group received higher scores. Trends of lower scores among children in one-parent homes appeared in studies of both elementary and junior high samples.

(Insert Table 4)

As mentioned in studies of aptitude, differences in achievement test scores between groups of children in different family structures are small and are reduced when adequate controls for socioeconomic status are introduced (Essen, Note 1; Ferri, 1976; Smith, 1972; Wilson, 1967).

Our review of studies using aptitude and achievement tests as measures of cognitive functioning of children suggests that children in one-parent homes score lower on standardized tests than do children from two-parent homes. However, these differences are usually small (less than 1 year difference). More importantly, we are unable to establish clear associations between one-parent status and depressed achievement since many studies do not provide adequate controls for socioeconomic status or racial or ethnic backgrounds

of students and most do not provide information on factors that might be associated with test performance, namely, onset, reasons and duration of parental separation, or on the quality of family relationships after separation. A detailed analysis of some of these studies and factors that are associated with performance is included in a later section of this review.

Patterns of Cognitive Performance

Total test scores do not provide any information on the processes of intellectual functioning that may be affected by family disruption. Some researchers have proposed that growing up in a one-parent household may result in patterns of cognitive performance that differ from the patterns of children in two-parent households. It has been suggested that quantitative problem-solving and analytic thinking of children in one-parent "father-absent" families is depressed relative to performance on verbal tests or measures of global thinking. A majority of the studies summarized in Table 2 used a general measure of cognitive performance, such as I.Q. or a total score on a standardized achievement test. We will now examine the research on specific components of intellectual functioning among children in different family structures: quantitative-verbal differences, field-independence and analytic thinking, and creativity.

Quantitative-verbal differences. The analysis of sex differences in performance on aptitude and achievement tests has revealed that, in general, females are superior to males in verbal areas, whereas males are superior to females in quantitative tasks. The problem-solving style of females is likely to be more global and to be characterized by less clear discrimination of stimuli. In contrast, males use an "analytic" approach to problems distinguished by a clear discrimination of stimuli and disregard for extraneous material. The analytic approach of males is reflected in their superior ability to solve

mathematical and spatial perception problems that require different skills in discrimination and differentiation than are required by tests of verbal ability.

Two hypotheses have been offered to explain a high verbal-low quantitative pattern of performance on cognitive tests. The first is the "identification hypothesis" proposed by Carlsmith (1964). Carlsmith suggests that differences in cognitive style and problem-solving strategies are part of the larger process of sex role typing and identification. When children identify with the same-sexed parent, they incorporate not only the parent's sex typed attitudes, values and social behaviors, but also the parent's cognitive style. Carlsmith suggests that in homes where the father is absent, children will identify with the more global and verbal cognitive style of mothers. Disruptions in cognitive style are unlikely to occur in girls in mother-headed households. However, boys who do not have an analytic problem-solving father with whom to identify may exhibit a "feminine" cognitive style reflected by a high-verbal and low-quantitative pattern of test performance.

The second explanation is the "anxiety interference" hypothesis proposed by Nelson and Maccoby (1966). They suggest that the loss of a parent is a stressful event that produces considerable anxiety for children. High levels of anxiety interfere more with the cognitive functions basic to problem solving and mathematical skills (e.g., focusing, maintaining attention, retention of symbols, and sequential reasoning) than with those in verbal areas such as vocabulary, reading, or creative writing. Nelson and Maccoby propose that stress might even enhance verbal performance through the child's attempts to escape tension through fantasy and reading. Loss of a father or mother is only one stressful event that may impact on the pattern of cognitive performance. Conflict among family members, whether or not parents are

divorced, and changes in economic conditions or the working status of parents are examples of other stressors that could suppress performance on quantitative problem solving tasks. According to his hypothesis, there is no reason to expect that boys in father-absent homes, as compared to girls, would show more disruptions in problem solving. The quantitative scores of both should be lower than those of their non-stressed peers of the same sex. However, Nelson and Maccoby propose that conflict over sex role identification may be another type of stressor that results in high levels of anxiety and depressed quantitative scores.

Several methods have been used to assess differences in quantitative-verbal patterns among children from one-parent homes. One method involves computing an index of differential abilities by subtracting raw verbal from raw quantitative scores. As Shinn (1978) states in her review, studies of cognitive patterns using a quantitative-verbal (Q-V) difference score cannot tell us whether the difference is due to lowered quantitative performance, improved verbal performance or both. A more illuminating procedure would be to construct separate deviation scores for verbal and quantitative abilities by subtracting the mean from each individual's score. In that manner, one could determine if "verbal enhancement" or "math enhancement" would be more likely to occur for persons with different family patterns. However, Q-V difference scores do provide us with information about the magnitude of difference among those in one- and two-parent family groups and are worth examining for this reason. Characterizing their work as both "tenatative" and "exploratory," Nelson and Maccoby (1966: 272) gathered Scholastic Aptitude scores and family history data from students in the 1959 and 1960 entering freshmen classes at Stanford University. Different scores between Q and V were computed for individuals. The magnitude of Q-V differences

among females in the one-parent group was larger than for females in the two-parent group. The reverse was true for men. College males from one-parent homes had smaller differences in Q-V scores than those from two-parent families.

Information from boys about how frequently the father was away from home lends support to the notion that father absence may have a nonrandom relationship to relatively large Q-V differences. The most "masculine" (i.e., higher quantitative, lower verbal) patterns appeared for those replying "never" or "occasionally" and the largest difference was recorded for those indicating a year or more of father absence. However, the groups were identical in math scores; group differences occurred because verbal scores were higher in the group with the more extensive father absence (1966: Table 2).

Nelson and Maccoby acknowledged the inconclusive evidence for predictions based on either the sex-indentification theory or from the tension-interference theory. They also cited research by Alpert (1957) at Stanford that failed to confirm the tension-interference hypothesis.

Carlsmith (1964, 1973) calculated Q-V difference scores on the Scholastic Aptitude tests for a set of Massachusetts high school boys and a sample of Harvard University sophomores whose fathers were absent from home because of wartime service abroad. Those whose fathers were away for at least one year or who had left early in their sons' lives (before age 1) had smaller Q-V differences. That is, the father-absent boys displayed a less superior score in mathematics, relative to the verbal score, then did the father-present group of boys. Carlsmith interpreted this pattern as more "feminine" or as indicating a more "global" and less analytical cognitive style.

It is important to note that Carlsmith focused on the difference scores between group means, not on the individual difference scores. If

one focuses on the separate patterns of Q and V scores, rather than on either the total scores or difference scores, comparisons between control groups and the various groups experiencing father absence have less clear interpretations. For example, in the Harvard class of 1964, the average verbal score of the total class (677) is above the average verbal score of men whose fathers were absent for a year or less at some time in their lives (660). The average score for men without fathers for 30 or more months was well above either of these (690). In isolation, this information might suggest some verbal enhancement as a function of paternal absence. This same group scored below the mean math score of the class (661 versus 695) whereas men who experienced shorter periods of paternal absence were within 10 points of the overall mean but consistently below it. Given admission procedures that select for high total scores, it is not surprising that men with the lowest Q scores (and longest periods of father absence) must also have high verbal scores. Verbal enhancement is therefore not a justifiable conclusion. Further, verbal enhancement is not evident in the less intellectually selective high school samples, in which 1 to 5 year periods of paternal absence were associated with lower Q and V scores than were obtained by young men whose fathers were not abroad in military service.

We cannot conclude, therefore, from the data reported by Carlsmith that mathematic aptitudes suffer relatively more than verbal aptitudes from periods of father absence. Such a comparison requires standardized individual scores in terms of the respective Q and V distributions. The use of simple arithmetic differences assumes that the Q and V scores are similarly distributed. Moreover, an analysis of Q-V scores assumes an interval scale with a fixed zero point so that a Q score of 400 is the same as a V score

of 400 and a Q-V difference of 50 is constant at all levels of Q or V. These properties of the SAT have not been substantiated.

The sum of other research is no less ambiguous with regard to the presence of a Q-V difference, to the enhancement of verbal aptitude versus interference with quantitative performance, or to a causal explanation for whatever pattern of differential cognitive skill is manifest among children experiencing paternal absence. Funkenstein (1963) purposively chose, from a class of 1100 Harvard College freshmen, forty students who represented extreme Q-V differences on the SAT admissions test (i.e., a Q score of at least one standard deviation unit larger than the V score, and vice versa). The "feminine" or global pattern of scores was associated with paternal absence from home during World War II for at least one year during the son't first five years. The two extreme groups of high verbal - low quantitative (Vq) and high quantitative - low verbal (Qv), both in good academic standing, manifested different academic interests, with the Qv extreme majoring in mathematics, engineering, or natural sciences and the Vq extreme studying the humanities or social sciences.

Altus (1958) compared the Q and L (linguistic) subscales of the American College Entrance Test (ACE) for 25 male college freshmen whose parents had divorced with a control group of males from non-divorced families. While the averages of the Q scores for the two groups were approximately equal (.72 point difference), the mean of the L (verbal) scores was higher in the group of sons from divorced families. The group means of males from non-divorced families on the Q and L scores were almost equal, whereas the group mean L scores for males from divorced homes was 6.28 points higher than their mean Q score. This "feminine" pattern positively correlated with the Mf (masculinity-femininity) subscale of the Minnesota Multiphasic Personality Inventory (MMPI).

A more recent study by Bernstein (1976) of 117 fifth-grade students from middle-income families showed differences in cognitive patterns between a father-present group and a group with absent fathers due primarily to divorce. Using the Iowa Test of Basic Skills, Bernstein examined the Math-Verbal discrepancy in the individual scores of each student. Both father-absent boys and father-absent girls had lower mathematics percentile scores than did the children in the father-present group, although the difference was significant only for the group of girls. On the other hand, Jones (1975) found no consistent association between father absence and a "feminine" versus "masculine" pattern of intellectual functioning on the Henmon-Nelson Test among students at Michigan State University. Jones compared the quantitative and verbal test scores of 30 students who had fathers living at home with another 30 students with a father who had been absent for at least two years prior to the child's twelfth birthday because of separation or divorce. "Early" father absence was connected with a feminine pattern of intellectual functioning, but "later" father absence was not. In fact, males in the late father-absence group achieved significantly higher scores in verbal and mathematical aptitudes than did those in the father-present and early father-absent groups.

Chapman's (1977) research among University of Virginia students found that for males, father absence was significantly associated with lower total SAT scores and lower verbal scores, but the Q-V differences that can be computed from his published data present a different pattern than that reported by Carlsmith at Harvard. Whereas men without fathers (because of death or divorce) for two years prior to age eighteen, those with stepfathers, and those in nuclear families all had Q scores exceeding

V scores, the Q-V difference was smaller in the nuclear group and largest in the father-absent group. Females from intact families had lower verbal and total SAT scores than did either the stepfather or father-absent groups. Females in stepfather families received slightly higher scores on verbal tests than did females in father-absent families, and lower scores on quantitative tests than did either the father-absent or intact family groups of daughters. The results generally were not consistent with any predictions about the effects of father absence on differential cognitive aptitudes or performance.

Fowler and Richards (1978) similarly found differences in the overall cognitive functioning of black, lower-income, father-absent and father-present boys and girls. Father-present females and males received higher scores on mathematics, reading, and language arts subjects of the Science Research Associates (SRA) Achievement Test administered in the second grade. The mean scores for each group were highest for the reading subtest. However, computations of the Q-V (mathematics versus reading) difference scores based on the published data reveal greater Q-V differences among the scores of the father-present males compared to father-absent males, and greater Q-V differences among the father-absent females compared to the father-present females where the reading and math scores were nearly equal.

The synthesis of findings from research studies that have examined quantitative verbal differences in intellectual functioning (measured by aptitude and standardized achievement tests) of children from one-parent homes is presented in Table 5. Four main questions are analyzed in these tables: (1) Are Q-V difference scores in one-parent groups larger than those in two-parent groups?; (2) Within the group of one-parent children, are scores on verbal tests greater than scores on quantitative tests?;

(3) Do children in one-parent groups score lower on quantitative tests than do children in two-parent groups?; and (4) Do children in one-parent groups compared to those in two-parent groups score higher on verbal tests? Attempts were made to analyze the studies on the basis of the sex of subjects and to separate results of I.Q. or aptitude tests from those derived from achievement tests.

(Insert Table 5 here.)

We conclude from the analysis of directional (as opposed to only significant) findings that there is no evidence to suggest that the magnitude of Q-V differences of students from one-parent families is larger than the magnitude of Q-V differences of students from two-parent families. There is an equal number of studies supporting both positions based on the aptitude test scores of those in selected college populations. The one study measuring differences in quantitative-verbal functioning on achievement tests(using test results from a group of 2nd grade black children) finds a larger difference in the Q-V mean difference scores of one-parent females than for two-parent females. A similar trend appears in the synthesis of aptitude test studies; that is, Q-V differences for females in one-parent families tend to be larger than for those in two-parent families. However, too few studies have been completed with female populations to provide any conclusive evidence for this.

Secondly, within the group of students reared in one-parent households, the synthesis of research studies yields no evidence that verbal scores on aptitude tests are greater or smaller than quantitative scores.

Only two studies using achievement tests have provided data for this question. Both these studies support the hypothesis that children from one-pareht homes have higher verbal scores than mathematics scores in achievement tests.

The syntheses of studies analyzing a between-group differences of those in one-parent versus two-parent homes on quantitative test scores suggest/ that one-parent family males, but not females, score lower on quantitative aptitude tests than do males in two-parent families. On the other hand, one-parent family females, but not males, score higher on verbal aptitude tests than do their two-parent female counterparts. On achievement tests, both male and female children in one-parent family groups receive lower scores on verbal and quantitative tests than do children in two-parent groups.

Field-independence and analytic thinking. Several studies relating the absence of a father to cognitive functioning in children have focused on the development of differentiated or "field independent" thinking. Field independence is an analytical problem-solving style that refers to the extent to which an individual's perception of an item is separate from the organized context in which it occurs. Evidence of analytical ability is usually derived from tests such as the Embedded Figures and Rod and Frame test developed by Witkin (Witkin, Dyk, Faterson, Goodenough & Karp, 1962). In the Embedded Figures Test (EFT) the subject is asked to locate a previously seen geometric figure within a complex figure designed to embed it. The Rod and Frame Test (RFT) requires the subject who is seated in a darkened room, to adjust a lighted tod within a tilted frame to a position he or she perceives as upright. The extent to which individuals can ignore contextual cues in solving each of these problems is the measure of their field independence. Other tests loading on the same factor are the Block Design, Picture Completion, and Object Assembly test of the WISC.

Sex differences in performance on tests of field independence have reflected, in general, a superior analytical style of males compared to a more global, less discriminating style of females. Differential performance of father -absent children on analytical tasks is explained by a sex-identification hypothesis. A close and warm father-son relationship is related to the development of analytical thinking in males, (Biere, 1960; Dyk & Witkin, 1965). Absence of a father or father figure in the home is thought to lead to a less differentiated style of intellectual functioning, particularly for boys.

Studies of field-independent functioning of children in one-parent homes have offered inconclusive evidence to support an association between father-absence and analytic style. A summary of studies is provided in Table 6.

Barclay and Cusumano (1967) studied field-dependent functioning of 20 black and 20 white male adolescents. Ten individuals in each of these groups experienced the absence of a real or surrogate father since the age of five. Field-dependence was assessed through four rod and frame tests. The authors found that boys in father-absent families were significantly more field-dependent than were boys in father-present families. Although black children were more field-dependent than were white children, there was not a significant race by father-absence interaction. In other words, regardless of race, father-absent family conditions were associated with a less analytical cognitive style. To support the hypothesis that father-absent boys may develop a closer identification with a mother, the researchers reported that on the Gough Femininity Scale, the father absent group of boys scored higher on femininity scores than the father-present group although these differences were not statistically significant.

(Insert Table 6 here.)

Chapman (1977) similarly reported that father-absent males were more field-dependent than males from either intact or stepfather families. Results for females showed very small differences or were inconsistent with any predictions about the effects of father-absence on differential cognitive aptitudes. Maxwell's (1961) study of 8-13 year old children from a clinical sample showed that lack of a paternal figure after age 5 was

associated with lower scores on only one analytical subtest of the WISC test (picture completion). Paternal lack before age 5 was not associated with test scores.

Two studies reporting data on the field-independent style of middle-income children from divorced and intact families did not support the relationship between analytical ability and rearing in a one-parent mother-headed home. Camara (1979) reported no differences in scores on the children's Embedded Figure Test for 9-11 year old children whose parents had separated for 2-3 years prior to participation in the study. Hetherington et al. (1979a) similarly found no differences in field-dependent scores between preschool-aged children in divorced and intact families. In both studies, mother had custody and divorced fathers remained in contact with their children. The results of these studies suggest that differences in analytical reasoning are not simply the function of the presence or absence of the father in the household. For example, Mertz (1976) found no apparent relationship between length of time a father was in the household and level of differentiation in one-parent families. One study suggests that the cognitive styles of children are related to maternal differentiation (Goldstein and Peck, 1973).

The research we have reviewed does not permit conclusions about depressed analytical ability as a function of living in a one-parent household. However, it should be noted that the two studies that found boys from father absent homes to be more field dependent involved the oldest samples of subjects. Sex differences in field dependence do not usually emerge until the late elementary school years or even early adolescence. It may only be when such sexual cognitive differentiation would normally occur that differences between children in father absent and father present homes can be identified. As we have mentioned earlier, stress associated with parental loss or separation or changes in family functioning may have a greater impact on

motivational processes that are related to performance on achievement tests or school grades than on the general cognitive abilities or cognitive patterns of children measured by tests of I.Q., aptitude, or analytical style.

Creativity and flexible thinking. There is probably more contradictory evidence regarding the antecedents of creative and flexible thinking than any other aspect of intellectual functioning. Although there have been only a few studies directly relating parental absence and the development of creativity, there is some empirical evidence suggesting that distance in the parent-child relationship may have a liberating effect on children and stimulate their creative activity.

Two lines of thought have guided research in this area. The first, proposed by Becker (1974) suggests that highly involved fathers may suppress creative achievement in their children, whereas mothers, on the other hand, are more likely to foster creative activity. Studies of family conditions related to the creative expression of children point to a home environment that allows opportunities for exploration and decision making, with a mother who encourages independence, individual freedom, and autonomy (Domino, 1969; Nichols, 1964; Schaefer, 1968). Several studies report a stronger relationship between creativity and time spent with a mother rather than with time spent with a father (Dreyer & Wills, 1966; Eisenman & Foxman, 1970).

Becker studied the relation between father absence and perceived parental influence on the creative performance of sixty undergraduate college students at the City College of New York. Students were divided into three groups: those who had experienced loss of a father by death, divorce, separation or abandonment before their twelfth birthday; those with both parents present where the mother, compared to the father, was perceived by the student as having a stronger influence; and those with both parents where the father, compared to the mother, was perceived as having a stronger influence. "Creativity" was measured by scores on the

Unusual Uses Test on dimensions of fluency, flexibility, and originality. Becker found that students from the two-parent high father-influence group scored the lowest on all three measures. Those from the father-absent and two-parent high mother-influence groups generated a larger number of ideas, were more flexible in identifying a broad range of categories, and provided more uncommon or original responses than did the two-parent father-influenced group. He concluded that perceived influence and not the absence of a father accounted for differences in creativity among students.

A second hypothesis relating parental loss to creative performance is offered by Gregory (1965). Gregory suggests that childhood loss of a parent by death may present children with a challenging life experience that leads to exceptional striving for achievement. A number of studies have reported childhood loss of a father in the family histories of gifted, "extraordinary," and highly creative individuals (Albert, 1971; Eisenstadt, 1978; Eisenmann and Foxman, 1970).

Studies that have attempted to relate parental absence to a parent are summarized in Table 7. Only one study reports evidence contradictory to the conclusions reached by Becker. Schooler (1972) interviewed 3,101 men employed in civilian occupations and analyzed their family histories for incidence of parental loss. Using respondents' analyses of hypothetical problems based on economic or social issues as a measure of ideational flexibility and rigidity of attitude, Schooler found that men raised in homes with no male adults were more rigid and less flexible than were father-present males. Schooler reports no information on the validity or reliability of the instrument used, so it is difficult to assess the quality of data gathered or conclusions reached.

(Insert Table 7 here.)

There are two few well designed studies on the relation of parental absence and the development of creative thought to come to any firm conclusions regarding this issue, although there is suggestive evidence that the salience of the mother resulting from loss of the father may enhance creativity in children. We have included this section in our review in order to recommend an area of inquiry that needs further attention. Studies based on a "deficit" model of parental loss have failed to examine potential benefits or positive outcomes for children as a result of family change. Most research in the area is based on the assumption that stress due to family disruption and rearing in a one-parent home environment leads to adverse consequences for children. More systematic studies of the conditions surrounding transitions in family life may offer evidence that stress due to changes in family structure or functioning may, for some children, lead to the development of positive coping strategies and striving for achievement.

Teacher Evaluations of School Achievement

Teacher-assigned grades and grade point averages are another important index of scholastic achievement of children. Grades differ from standardized tests in that the latter are generally measures of broad contents of knowledge that are disassociated from specific course content. Grades, on the other hand, are measures of learning in limited areas of study peculiar to a given course or teacher. Achievement in this sense is defined by how well a student can meet the objectives set by teachers and school staff. Through experiences with students and interactions with other professionals and community members regarding expectations for performance, teachers identify what can be learned in various subject areas by children at different ages and find ways to help children learn the contents of a curriculum. The evaluation of students' success in learning may be based on teachers' judgments of children's ability to master skills and knowledge, to apply knowledge to novel situations and to be productive in the classroom.

The conventional system of using letter grades or grade points to denote level of success in school performance appears to be a fairly simple one, easily understood by parents and lay persons seeking information on students' progress. This system is currently being used in about three-fourths of all schools in the United States (National Education Association, 1970). Grade point averages (GPA) have turned out to be highly predictive of college success, even better predictors than scores on college entrance examinations (Lindgren, 1980). Many educators argue that grades offer a more useful evaluation of student progress than standardized achievement tests because they include teachers' informal observations and impressions of how children think and solve problems. Thorndike and Hagen (1977) write:

> The more elegant procedures of formal testing and measurement must be supplemented by the cruder methods of informal observation, anecdotal description and rating if we are to obtain a description of an individual that is useful, complete and comprehending.

There are, however, numerous problems with the use of teacher-assigned grades as a measure of student achievement. For one thing, schools and communities differ in their concepts of what constitutes a good education. The interpretation of student grades in various subject areas may differ among schools and prevent meaningful comparisons of student achievement across communities. Secondly, there is considerable variation among teachers as well as within the standards of an individual teacher in grading students work (Akeju, 1972; Educational Testing Service, 1961; Starch, 1927; Valin, 1961.)

There is also evidence that teachers may be influenced by variables other than actual performance in grading student progress (Ebel, 1968; Markham, 1976). For example, even when levels of achievement measured by standardized tests are the same, girls characteristically receive higher marks than boys (e.g., Hilker, 1976); students who are obedient, conforming and industrious tend to receive higher grades than those who are perceived by teachers as rebellious and lazy (e.g., Morrison, 1969). Ebel (1968) suggests that teachers base grades on social behaviors, such as cooperation, and not on mastery of subject matter.

Although grades may not be true indicators of intellectual performance, they may, as Lindgren (1980) suggests, provide an index of scholastic adjustment, that is, the ability of a

student to adapt his or her behavior to the expectations of teachers. With this distinction in mind, let us turn to a review of studies that have compared the teacher-graded performance of children from one- and two-parent homes.

Studies of the scholastic performance of children in different family environments offer some evidence that children in one-parent homes receive lower grade point averages than do children in two-parent families. As we shall see later, this should not be interpreted to imply a causal relation between one-parent family status and depressed school grades.

Summaries of research studies in this area are presented in Table 8 . The most recent and perhaps most controversial study comparing achievement and behavior records of children from single-parent and two-parent homes was conducted by the Kettering Foundation and the National Association of Elementary School Principals. Statistical data on students' class standing in low, average or high achievement groups based on grade point averages were gathered from schools in the United States with a total of 18,244 students. The preliminary reports of the analysis based on 8,556 students (Brown, 1980) revealed differences between family groups. A larger proportion of children from one-parent households appeared in the low achievement groups compared to those who lived with both natural parents or with one natural parent and a stepparent. In the published report of findings, Brown (1980) used percentages to describe the differences in achievement and behavior among family groups. The large differences in numbers of single and two-parent families (the ratio of two-parent children to single-parent children was 3.75 to 1 at the elementary level, and 5.26 to 1 at the secondary level) made it difficult to interpret the percentage comparisons made between groups. In a later

report prepared by Evans and Neel (Note 2), a multivariate analysis was performed to determine differences between the family groups at elementary and secondary levels. Separate analyses were conducted for children from lower-income families (determined by participation in a free lunch program) and for those who did not participate in the free lunch program. Significant differences were found between one and two-parent groups of children when income was not controlled. Elementary and secondary students from one-parent homes were placed in the low achievement group significantly more often than were children from two-parent homes. However, the authors fail to report whether differences in achievement status remained significant when the two income level groups were analyzed separately. A severe criticism of this study is the authors' implication of a causal relation between one-parent status and achievement. No information is provided about the background characteristics of the population, such as race or ethnicity, reasons for one-parent family status or recency of one-parent status. The high rate of mobility in the population reported by the authors suggests the presence of stressors other than parental separation. In addition, school records used to determine one-parent status may not have been a reliable source of information on family background.

The failure to control or account for either socioeconomic status or ethnic background of subjects is a methodological problem common to several studies of this type that report depressed achievement among one-parent family children (Feldman and Feldman, 1975; Jaffe, 1966; Hess, Shipman, Brophy, and Bear, 1968; McNeal, 1973; Shelton, 1969; Stetler, 1959; Webb, 1970.) We cannot determine whether low achievement is linked to family status or to the differences in the economic circumstances between family groups. However, the studies that have

controlled or compared sociocultural backgrounds of families report lower achievement by children in single-parent compared to children in two-parent homes. Blanchard and Biller (1971) examined the effects of father availability and absence on the grade point average of third-grade boys from working-class and lower middle income white families. The academic performance of the high father-present group was superior to those who had experienced father absence whether before or after age five. Kandel (1971) reported larger percentages of high school students from intact families in the top quarter in grade point averaage of their class. This finding held for black and white females, and white males, but not for black males.

Collin's (1970) study of black children in grades four, six, and eight found differences in teachers' ratings of reading and mathematics, although significant differences favoring the intact family group were found only for 6th grade mathematics. Herzog's (1974) study of Carib boys in three socioeconomic family groups also reported higher scores on teacher-graded exams for those in the father-present group. Similar findings are reported by Wasserman (1972) in his study of 10 to 15 year old black youths from one and two-parent families in public housing. Other studies are described in Table 8. As can be seen from these summaries, most studies have been based on teacher reports of black children from lower income families. Two studies that controlled for or used I.Q. as a coveriate (but did not report data on socioeconomic or ethnic background) reported significant differences in the achievement grades of upper elementary and junior high school students favoring those from intact families (Keller, 1969; Shelton, 1969).

(Insert Table 8)

Four studies have reported no significant differences between scholastic grades of one- and two-parent family students (Atkinson and Ogston, 1974; Birnbaum, 1966; Kitano, 1963, and Mackler, 1975). However, group means were not available so it is not possible to identify the direction of differences.

A synthesis of research studies on parental absence and teacher-rated achievement is presented in Table 9. Even when we eliminate studies that have failed to use adequate controls for background variables such as SES or ethnicity, we find evidence to suggest that compared to two-parent family children, students in one-parent homes receive lower grade point averages. More studies are needed before we can report any conclusive evidence for depressed achievement for middle or upper-middle income families. However, preliminary studies would suggest differences among one-parent and two-parent family types for these income groups as well.

As shown in our earlier review of studies that measured aptitude or overall achievement scores on standardized tests, it is unlikely that the differences in grades received by children in one- and two-parent homes are due to differences in intellectual ability. We did not find large differences between groups of children in the two types of families on standardized tests. For most children, intelligence tests are fairly good predictors of academic grades. Therefore, a high I.Q. would lead us to predict superior school work, whereas a low I.Q. would predict poor work. Children who receive lower academic grades than would be predicted by I.Q. test scores generally are referred to as "underachievers." This label implies a motivational factor that influences school performance.

One possible explanation for the depressed achievement ratings by teachers may be that these children lack or appear to lack interest or motivation to learn in the school setting. As we will discuss in a later section, teachers' perceptions of students' willingness to cooperate and "try hard" can affect their evaluations of student work.

(Insert Table 8)

Years of Schooling Completed

Completed years of schooling is another important index of scholastic achievement. Featherman and Hauser (1978) analyzed the relationship between family structure and years of school completed in a large sample of residing males in the United States who were born between 1907 and 1951. Their results are summarized in Table 10. Compared to men who lived with both parents, natural or adoptive, through age 15, men reared in a one-parent family for most of their first sixteen years completed about three-quarters of a year less schooling. This relative deficit reflects statistical controls for socioeconomic status and race.

(Insert Table 10 here)

Across successively younger birth cohorts, starting with the 1907-1911 cohort and moving down to younger ones, the handicap of one-parent family structure shows a small irregular decline in magnitude from .85 year to about .6 year. Interestingly, this decline is coincident with a rise in the mean educational level of males during this period and a decline in the variability around the mean (indicated by cohort means and standard deviations). Declining variability in the education of successive birth cohorts has reduced the predictive important of many aspects of social background for scholastic achievement of this kind, including the effects of rearing in a one-parent household. Still, the net impact of a one-parent family structure is apparent even though its manifestation throughout the range of schooling is undergoing change. For example, among cohorts born prior to 1937, the handicap of rearing in a one-parent household was larger

among persons completing 12 or fewer years of schooling than for those completing some college. In subsequent cohorts, the relative effects were reversed so that the handicap of one-parent rearing was greater for persons matriculating in post-secondary education (Featherman & Hauser, 1978).

Despite the fact that data in Table 10 and the study from which they are drawn do not permit us to assay the effects of the reason for family disruption (e.g., death, divorce, separation, or unmarried parent) or its timing or duration, they do suggest that the experiences of living in one-parent family structures are not homogeneous in their consequences. When we examine within each cohort, the achievement of men reared by both parents, by mother or other female head, or by father or other male family head in relation to the grand mean for the cohort, we find that male-headed, one-parent families are the least advantageous for the education of male offspring. Males reared by their fathers or other male figures complete a year less schooling than the average in their cohort. (Note, however, that unlike the coefficients for "one-parent," the coefficients for the three family structure types -- both, female-headed male-headed -- do not reflect controls for family socioeconomic status or race.) Rearing in a female-headed family is associated with a lesser disadvantage of about a half-year below the cohort average, while the most beneficial arrangements are within two-parent families.

Rearing by one parent for a significant portion of pre-adult life is linked to the socioeconomic status and race of the family -- at least in historical perspective. Given the linkage between both socioeconomic status and race to length of schooling and other forms of scholastic achievement, it is not surprising that the unique impact of family structure among

statistically equivalent groups of family SES and race is less than the gross impact. For example, among American men born after World War II, the total gross educational differential between those reared by both parents and those reared in a male-headed family was about one year; this difference was reduced to about one-half year when adjustments were introduced for race, number of siblings, and SES (Featherman & Hauser, 1978). Although these correlates of family structure reduce the significance of rearing in a one-parent versus a two-parent family for education, they do not eliminate it. Neither do they fully attenuate the differential disadvantage associated with a male- versus a female-headed family.

For men born after the Great Depression, the net effect of race on schooling has been smaller than the net effect of rearing in a one-parent family. The differential disadvantage of those reared by one-parent, relative to those reared in black families, actually has been increasing among post-World War II cohorts of men equated statistically for family size, parental SES, and farm background. Blacks reared in one-parent families obviously are placed under the most severe disadvantage. This striking finding is illustrated by the comparison of the net effect of being black (versus white or non-black) with the net effect of a one-parent family background on years of school completed. Results of this comparison are given in Table 11. In the 1932-1936 birth cohort, those reared in one-parent households completed about three-quarters of a year less schooling than did men in intact families with equivalent SES, number of siblings, farm or non-farm background, and race. On the other hand, the effect of being black in the same comparison was about a half-year deficit. In the cohort born between 1942 and 1946, the net effect of a one-parent home was a .61 year

deficit while the net deficit associated with race was about .09 year (see Featherman & Hauser, 1978, Table 5.9). Thus, whereas the impact of race on the education of cohorts that would have completed their schooling since the mid-1950's has been declining, the disadvantages of one-parent rearing for continuation of schooling have declined much more slowly across successive cohorts.

(Insert Table 11)

These relationships have been replicated for Canadian males and females in nationally representative samples taken at the same time as the United States study described in Table 10 (Featherman & Hauser, 1978).

Undoubtedly, observations of differential scholastic achievement illustrated by data in Table 10 are thought to contribute to some causal understanding of the relative advantage of the two-parent situation. This line of reasoning is plausible, but it is less compelling if one entertains the view that achievement on tests and teacher evaluations and the completion of additional years or grade levels of schooling may be linked to nonidentical sets of antecedent conditions. Young adults from one-parent backgrounds may acquire less schooling than their counterparts because of economic circumstances of family life that require entry into the work force at earlier ages. Patterns of entry into work and marriage are discussed in the next section. It is interesting to note, however, that Duncan and Duncan's (1969) study of family stability and occupational success reported that men reared in one-parent female-headed households began work at an earlier age than men of the same race reared in two-parent families. (1.2 years for blacks and .8 year for non-blacks.) The patterns of formal schooling completed by the men in this study were consistent with the trends reported by Featherman and Hauser.

We cannot conclude from these data that relatively premature termination of schooling is necessarily the result of earlier or cumulative academic failure or deficiency in intellectual performance. In the next section, we discuss the possibility that the shorter length of schooling among those reared in one-parent homes is connected to early marriage, job taking, and entrance into adulthood. Despite our inability to disentangle causal antecedents at differential length of schooling, the evidence clearly indicates a substantial disadvantage from rearing for lengthy periods of childhood in arrangements that do not include two (biological or adoptive) parents.

Achievements Beyond the School Years

Experiences of one-parent rearing during the school years are linked to reductions in the amount of education that males and (apparently) females acquire. That these same children, in comparison to their peers, suffer some scholastically handicapping course of cognitive development or some inhibition of scholastic performance on ability and achievement tests is much less clearly established in the research literature that we reviewed. It is conceivable that differences in achievement may reflect the variations in the life course transition from youth to adulthood--especially the entrance into early marriage--experienced by those in households of different structures (e.g., one-parent versus two-parent).

Elder's (1979) research on families affected by the Great Depression reflects such a point of view -- namely, that socioeconomic stresses and changes that impinge on family interaction can have long-range impacts on the achievements of offspring. These consequences may arise through the emergent personalities of the second generation, but they also can reflect the more indirect effects on the ways the filial generation undergoes the transition into adulthood.

Children from one-parent homes, particularly those with lengthy periods of one-parent rearing, may experience different courses of transition into adulthood than do children from nuclear families. For example, the timing and ordering of events such as marriage may be altered in relation to the normative patterns for a cohort as a whole or for those reared primarily in nuclear family settings. In particular we suggest that the timing of marriage and the probability of remaining in a once-married state will reflect family history. Such an hypothetical consequence, although not a socioeconomic or scholastic achievement per se, has been associated with levels of educational, occupational and economic achievement (eg., Duncan and Duncan, 1969; Duncan, Featherman, and Duncan, 1972; Hogan, 1978, 1979). We shall review some new data in support of this speculation.

Using an arbitrary scale (ranging from 1 to 100) to denote the relative status or standing of each detailed occupation (sometimes referred to as a "prestige" or "socioeconomic status" ranking (see Siegel, 1971; Duncan, 1961), it is possible to demonstrate that both men and women reared in one-parent, especially male-headed households, hold slightly lower status occupations in the early stages of their careers (Table 11). Persons reared by one parent, hold first jobs (subsequent to the completion of schooling) that stand between one-quarter to one-third standard deviation in status below the respective means of their birth cohorts. Persons not experiencing long durations of one-parent rearing fall at the average status level. For both men and women, rearing by a divorced, separated, or widowed father is associated with slightly less occupational achievements. However, if one controls for differences in family type and related effects of economic status, race, farm or rural residence, number of siblings and respondents' educational levels, the net effects of one-parent rearing virtually disappear. (Differences of 5 points on these occupational scales are no larger than errors of measurement and should not be interpreted.) In addition, investigations of the connections

between various aspects of social origin, including rearing in nuclear versus other family types, reveal that the relationship between family type and occupations and earnings thoughout one's adult working life in.mediated entirely by differential schooling (Featherman and Hauser, 1978). In other words, the effects of family history on the early occupational prospects of men are modest and seem to reflect the unequal educational achievement of children from different family backgrounds.

There are, however, apparent reflections of family marital history in the social achievements of young adults in making and maintaining their own first marriages. Previous research has documented an intergenerational correlation between marital breakdown in the parental family and divorce in the filial generation (Bumpass and Sweet, 1972; Duncan and Duncan, 1969; Mueller and Pope, 1977). This work has not separated family histories by type of one-parent family, or taken into consideration potential correlates of marital instability such as age at first marriage.

For both men and women in North America, rearing in a one-parent, male-headed family is correlated with earlier than average first marriages (Table 12). It appears that rearing by fathers is especially important in the marital behavior of young women, who have tended to marry from 1.5 to 1.8 years earlier than their counterparts at the cohort average. This pattern appears in the histories of all cohorts born since World War II (and among those born prior to it but not displayed in Table 12). The gross effects among men may be more moderate.

When one compares men of equivalent schooling, the ages of marriage among those reared by fathers or another male is virtually identical to the age of marriage among men reared by both parents. Men reared by divorced, widowed or deserted mothers tend to marry slightly later than other men. These differences among men as a function of parental family history are quite small in relation to the standard deviation. If anything they suggest that differential lengths of schooling of men in the three types of family structures account for a major portion of the gross effects on age at first marriage.

(Insert Table 12 here)

Among women, however, length of schooling is not a large factor in family type differences in age at first marriage. Neither does rearing by mothers appear to postpone the first marriages of women as it does for their brothers. If anything, both types of one-parent rearing have greater similarity of consequence for the marital histories of young women than for men. As we suggest in a later section, it is perhaps the larger responsibility of sons to look after their "dependent" mothers and siblings that could account for this sex difference.

One-parent rearing in itself appears not to increase the vulnerability of males to the break up of first marriages. For example, Table 14 shows that the effects of rearing by a mother or other female are not different from those of the two-parent family context. However, first marriages for males are more likely to be terminated if a man was reared by only his father or other male family head. This is the only instance of "inheritance" or marital instability. Interestingly, these variations by type of family history are not reflections of socioeconomic differences in the parental household, race, respondent's own education, or age at first marriage. (The net effects in Table 13 are virtually identical to the gross effects.)

(Insert Table 13 here)

It is conceivable from data presented in Tables 12 and 13 that differences by family type in length of schooling might ensue from accelerations and delays in the transition to adulthood, especially the timing of entry into first marriages. The transition into adulthood as a series of component transitions -- exit from school, entry into a first full-time job subsequent to schooling, and entry into first marriage -- is illustrated in Figure 1. Other components, such as exit from the parental household, could be included were data available. This information may be crucial for a complete description and understanding of this transition in the life course, but the centrality of work and family formation as normative, age-graded events in American culture imply that our three components will render a reasonably accurate portrayal of the passage into adulthood. Following Modell et. al (1976) and Winsborough (1979) Figure 1 displays the distribution of ages at which the first 25 percent, 50 percent, and 75 percent of each family type -- nuclear (both parents), male-headed (father only), and female-headed (mother only) -- within each broad birth cohort completes each of the three component transitions. It considers the transition begun when the first 25 percent of men have the particular component underway -- exit from school, for example -- and it defines the transition completed when 75 percent of the males have begun the transition. Thus, on each of lines A, B, and C, the initial mark signifies the 25 percent, and the terminal mark denotes the 75 percent; the median age of each component transition, and 50 percent mark, is denoted by the letter M on each line.

(Insert Figure 1 here)

The two types of one-parent families differ from the intact or nuclear cases in each cohort in several ways. First, both the exit from school and the taking of first full-time jobs begin earlier for men experiencing rather lengthy periods of one-parent rearing. In most cohorts, the median ages of school leaving and job taking are younger than the median age of school exit for men reared by both parents. (The nature of these data preclude our identifying men in the "both" category who may have had brief periods of one-parent rearing.) In all cohorts, the transition into first full-time jobs is completed by one-parent men before it is by men from two-parent families; but one-parent men are less likely to enter their first marriages as quickly as their two-parent counterparts. This is not to say that they marry at older chronological ages, for that is not completely accurate. Rather, as a group, the one-parent men are less likely to become married as soon after -- or before -- the taking of a first full-time job than their two-parent counterparts. However, these relationships may reflect uncontrolled socioeconomic, racial and other correlates of family type.

Life-course transitions into adulthood are not identical for males reared by males and those reared by females, despite the commonalities they share in contrast with men reared by two parents. When seen in historical perspective, father - or male-headed families are more likely to launch their offspring toward independence from the family of socialization at an earlier chronological age than mother-headed families (at least as indexed by the age at which the first 25 percent of the group exits school). In addition, entry into first marriages occurs at a relatively younger age for men in recent cohorts and from father-headed

versus mother-headed families. Conversely, men reared for substantial years by their mothers or other females marry later than men from male-headed households. The overlap between the entry into work and that of starting a new family is the least extensive in instances of men reared by their mothers. One can only speculate that this pattern may be connected with the assumption of some responsibility for the mother and/or siblings by the son, thus postponing the establishment of a separate household with a spouse.

These analyses of data on life course transitions and various socio-economic and social achievements of young adults are far more suggestive than conclusive. In the main, however, they imply that substantial periods of rearing in one-parent contexts -- especially where a male is the sole parent -- can have effects that extend into adulthood. These extensions are not well understood. Length of schooling is the easiest consequence to demonstrate, and through differential schooling, small differences in the social standing and economic potential of first full-time jobs can be linked to family history. Men and women from one-parent father-headed families marry at younger ages and experience greater risk of divorce in first marriages than those from other family histories. Perhaps it is the difficulties that a single male parent faces in managing household, job, and child rearing that prompt youth of both sexes to launch toward adulthood (marriage) at an earlier chronological age. In so doing, these youth may withdraw prematurely from their educational pursuits. Consequently, their length of schooling is shorter than the schooling of those reared in two-parent families. In any case, patterns of transition into adulthood do vary across individuals with long histories of one-parent versus other types of family life, and they offer an additional arena for future research on the relation between family context and achievement.

Factors Associated With Cognitive Performance and Achievement

Throughout our review of literature on the intellectual functioning and achievement of children we have referred to several dimensions along which the effects of one-parent rearing appear to vary. These include: the reason for one-parent household status; the duration of exposure to one-parent rearing and the age of the child at first exposure; the mediating influences of parent surrogates; the age or maturational level of the child; the presence of siblings; the socioeconomic status of the child's family or residence household; the ethnic or racial background of the family. In this section we will reexamine studies that have provided information on how these dimensions may affect the cognitive performance of children in one-parent homes.

Reason for one-parent status

Most investigations confound the analysis of effects of one-parent rearing by combining all non-intact family groups into an undifferentiated category of "broken" or "one-parent" homes. One-parent status in these studies may refer to families who have experienced parental death, divorce, separation, desertion, or temporary father-absence due to employment or military service, or it may refer to families where the mother has never married. Only five studies have examined the differential effects of family living arrangements according to the reasons for parental absence (Crescimbeni, 1965; Essen, Note 1; Ferri, 1976; Gregory, 1965; and Santrock, 1972.)

Crescimbeni (1965) analyzed the Metropolitan Achievement Test scores of children in grades two through six. He reported significant differences between the mean scores of groups of children in two-parent and father-absent groups favoring the intact family children. Differences between intact and divorced family children were largest, followed by absence due to parental death and to desertion or separation.

Ferri's (1976) longitudinal study of British children showed that on standardized reading tests administered at age 11, children who lived in mother-headed families because of marital breakdown scored below all other family types -- nuclear, mother-headed due to paternal death, and motherless primarily due to maternal death. However, after adjusting the data for social class, all significant effects of family structure were eliminated, and the achievements of motherless children were below all others. Arithmetic scores at age 11 were affected by family structure within all social classes. Those who were father-absent due to marital breakdown scored less than two points below children from nuclear families (sample mean was 16.62; standard deviation unreported). Similarly, eleventh grade scores in arithmetic and reading showed small differences favoring children from nuclear families. On the other hand, Essen (Note 1), reporting on the same British children in Ferri's study at age 16, found that the reason for parental absence was not a significant factor influencing scores. Differences between intact and one-parent groups were no longer significant after adjustments were made for socioeconomic status.

Gregory (1965) reported largest differences between quantitative and verbal scores on the college entrance examination occurred among students who had experienced parental divorce or among those who had experienced parental loss before the age of 10 years.

Santrock (1972) offers contradictory findings regarding the consequences of paternal death, divorce or separation for junior high and high school children. For example, comparisons of the 3rd and 6th grade Otis I.Q. scores and Stanford Achievement Test scores for males and females reared by widowed mothers, versus separated, deserted or divorced mothers, favor the children of widows when paternal absence occurred after age 6

(1972; Table 1). Developmental changes in scores between grades 3 and 6 are conflicting. For example, for boys in intact families, mean I.Q. increased 1.2 points and mean SAT increased 2.7 points. For boys who lost a father because of marital dissolution between the ages of 6 and 9, the mean I.Q. rose 2.3 points and mean SAT rose 3.6 points. For boys experiencing parental death during the same period of their lives the gain in SAT was about equal to boys from intact families and less than the one-parent group of boys, but the mean I.Q. declined 2.2 points. For boys losing a father by marital breakdown at ages 6-11, mean I.Q. dropped less than one point, but SAT increased 30 points. For boys losing a father by death, mean I.Q. dropped 2.2 points, and SAT increased by 2.7 points. Boys whose fathers left the family when the son was age 12-13 suffered a 5.6 point mean loss in I.Q. but a 3.4 point gain in SAT. Girls, fatherless because of marital dissolution, gained nearly 3 points in I.Q. whereas girls in intact families dropped 2 points on the Otis I.Q. test. These and other inconsistencies in the matrix of data reported by Santrock do not offer a defensible conclusion that divorce compared to parental death has more harmful consequences for school-related cognitive performance of children in elementary school.

It is unfortunate that these and similar longitudinal data were not analyzed as a series of individual change scores, with changes in correlated social and economic status controlled. In that manner, the developmental aspects of the relationship between change in family organization and cognitive growth or decline could be analyzed as a dynamic process rather than as a static differential of social aggregates at multiple times of measurement.

When we look at all the studies that have examined reasons for parental absence, it appears that children of divorced parents are performing at lower levels on tests of achievement and I.Q. However, an examination of gains in scores over time in Santrock's data suggests that children in one-parent homes may progress at a pace similar or better than that of children in nuclear families depending upon the age of the child at the time of separation and reasons for separation.

Duration of absence and age at onset.

There is no clear evidence of a relationship between duration of parental absence and children's cognitive functioning although such a relationship has been suggested in a previous review by Shinn (1978). While it is reasonable to expect that longer periods of living in a one-parent household may produce more severe effects on academic performance, no study to date has confirmed this relationship. One difficulty with studies in this area is that the age of the child at onset and duration of parental absence frequently are confounded, particularly in studies using age or birth cohorts of children who have been reared since onset in a one-parent household. The investigations of Douglas et al., (1968) and Ferri (1976), both longitudinal studies of representative British populations, failed to find systematic patterns of deficit as a function of age of child at onset or duration of absence. Similarly, Sutton-Smith et al., (1968) reported no significant association between the number of years of father-absence and ACE scores for female students.

Two studies suggest that duration of absence may not be the most influential factor in determining outcomes. Living in a one-parent home does not necessarily mean total absence of a father; nor does father-presence necessarily mean high levels of contact between father and

children. Blanchard and Biller (1971) found significant differences in achievement test scores of 3rd grade white boys when a comparison was made of those in complete father-absent and high father-present groups. However, children from low father-present families (based on the physical presence and involvement of the father in child care) received lower scores than did children from the late (after age 5) father-absent group. Landy, Rosenberg, & Sutton-Smith (1969) found that duration of partial father absence due to night shift work was negatively related to aptitude test scores of college-age females, but this difference was fully a function of the difference between the quantitative scores of girls experiencing no father absence and those whose fathers were totally absent for 10 or more years. That boys and girls with the most extreme circumstances of father absence should differ from others with the most favorable circumstances of parent availability is not surprising, although causal relations cannot be inferred from these studies.

Similarly, the relationship between age of child at the time of parental separation and cognitive performance has not been clearly eastablished. Some studies have reported more detrimental effects if parental absence occurs before the age of five (Blanchard & Biller, 1971; Landy et al., 1969; Santrock, 1972). Some studies report children in grades 1-3 compared to preschool or later grade at the time of parental separation are doing most poorly (Kelly, North, & Zingle, 1965; Maxwell, 1961; Shelton, 1969); one study reports a curvilinear trend for an age analysis with children in the 3 to 5 year old group doing better than those younger or older (Santrock & Wohlford, 1970). In the more tightly controlled British studies (Ferri, 1976; Douglas et al., 1968) no effects of age were found. The inconsistent findings and methodological problems of studies discussed earlier do not allow us to form any conclusions about the effects of age of child at time of separation on cognitive functioning.

Parent Surrogates

Almost eighty percent of divorced individuals remarry, although the rate is lower for women. For the child, remarriage of parents presents some distinictive problems. Research on family relations in remarried families is meager and has been based on verbal, often retrospective reports of parents. These reports suggest that the role of a stepparent is poorly defined and may be particularly ambiguous in families in which there is active involvement of the children with the noncustodial parent. The adjustment of children to stepparents seems to be better when the remarriage has occurred when children are young, than when they are preadolescents or early adolescents (Bowerman & Irsh, 1962; Hetherington, Cox, & Cox, 1981).

Studies of the cognitive functioning of children in stepparent, particularly stepfather families, are based on the notion that the presence of a father surrogate in the home may alleviate some of the effects of father absence by providing a male role model with whom children can identify. A surrogate father also may offer additional economic and emotional support for children and mothers. Having a father surrogate to share household and family responsibilities may allow more time to be spent with children and provide an additional adult resource to help and encourage children in their school work.

It seems likely that in remarriage, as in parental divorce or death, there may be an initial crisis and readjustment period that involves a transition between family forms, followed by an eventual restabilizing of family functioning in the stepparent family. The point at which one taps into this sequence of changing family patterns will be reflected in the image obtained of family relations, adjustment and academic functioning of children. Unfortunately, data on the time of remarriage or family experiences before remarriage (e.g., parental separation or death) have not been used in analyses of the intellectual functioning of children. Therefore, findings on the mediation effects of a surrogate father are highly mixed.

Chapman (1977) reported that college female students from stepfather families scored significantly higher on SAT tests than father-absent females, but did less well than females from intact families. On the other hand, Essen's (Note 1) longitudinal study of British children found that children with a substitute parent figure received lower achievement test results than those whose parents had remained alone. Similarly, no relationship was found between the availability of a parent surrogate and children's achievement in studies of white lower-income and working-class family boys (Blanchard and Biller, 1971).

There is some evidence that other factors besides the presence of a surrogate parent may influence academic outcomes for children. Mackie, Lloyd and Rafferty (cited in Shinn, 1978) found no relationship between the types of interactions among children and their natural and substitute fathers and children's academic performance. Lessing et al. (1970) found that 9 to 15 year old children with father surrogates scored between father-present and father-absent groups of children on several of the WISC subtests. However, interactions of the father presence variable with "social class" were found on many of these tests (e.g. "information," "comprehensive," "similarities," "vocabulary," and "total verbal I.Q."). In the working class, mean scores for the father-present children were above both of the father-surrogate and father-absent groups; the mean scores for the father-present and father-surrogate groups were about the same. In the middle class sample, however, the father-present children scored below both groups; the means of the father-surrogate and father-absent groups were highly similar (1970: Table 5). These anomalous results for the middle-income family children may be due to the "wide range of personality and behavior problems" (1970: 183) observed in this group.

Gordon (1972) in a reanalysis of a portion of the national "Coleman" study found higher verbal ability among ninth grade white children in families with no male adult than for those in "weak" male-headed families (i.e., those with a surrogate father who is not employed). In the working-class and lower-income families, the mother-headed-family children and the employed-father children were equally more likely to score in the top one-third of the verbal ability distribution than were children reared by neither parent or in a family with an unemployed father.

The results of these studies suggest that the availability of a father surrogate does not necessarily mean superior achievement by children when compared to those in father-absent, mother-headed families. In fact, the presence of stepfathers may, in some cases, portend less advantageous cognitive abilities than situations in which mothers rear their children alone.

Age or Maturational Level of The Child

Several longitudinal studies suggest that the effects of one-parent rearing on children's cognitive functioning may not emerge fully in the preschool years or that test scores and academic achievement of young children are not so strongly affected as the achievement levels of those tested at later ages. However, a closer examination of these studies yields no evidence to support such a conclusion.

Hess et al. (1968; 1969) followed a small group of urban black families and their three-year olds through the children's second grade in school. A comparison was made among the working-class families where the father was absent and those where he was present. In both groups, the family head was in an unskilled occupation. In the father-absent group, the families were receiving Aid to Dependent Children (ADC) payments, whereas father-present working-class families were not receiving welfare support.

Thus, initial income and family size factors were not equivalent. At age four, the group means for I.Q. scores of the children in both working-class groups were equal; near the end of second grade, neither the mean differences nor the average gain scores on equivalent tests were significant (1969). Although the differences between groups in reading readiness and reading primer scores were significant at age seven, the arithmetic difference in actual scores between the father-absent and father-present groups became smaller over time and in all cases the absolute gains or improvements in grades favored the father-absent group (1969: Tables III-1). There were, however, increasing differences between ages four and seven for the two groups on teacher-assigned grades for conduct, arithmetic, and writing, but not reading. The relationship between grades in conduct and socioeconomic status and family structure suggest that part of the difference in grades may reflect some global teacher reaction to the child's behavior in the classroom.

Rees and Palmer (1970), synthesizing data from several longitudinal studies, report a trend toward an association between one-parent family status and I.Q. at age 12, but not at age 6. Boys but not girls were affected. Changes in I.Q., either at an aggregate or individual level, are not reported. However, since Rees and Palmer do not specify the timing of family disruption in the synthesis of data, the difference could indicate a somewhat later (between the ages of 6 and 12) occurrence of parental separation than some delayed effect of one-parent rearing.

Longitudinal studies including an analysis of intraindividual changes in achievement and I.Q. of different age cohorts experiencing parental separation may provide evidence needed to assess the effects of the maturational level or age of child at the time of study. Until these data are available, no firm conclusions can be made regarding the presence or absence of delayed effects of one-parent rearing on achievement.

Presence of Siblings

The small number of studies and lack of consistent findings do not allow us to form any conclusions about the possible modifying effects of siblings on the cognitive performance of children in one-parent homes. For example, Ilardi (1966) and Sutherland (1930) found that the presence of siblings was not a significant factor influencing I.Q. scores of one-parent family children. Chapman (1977) reported enhanced verbal ability only among college females in stepfather with same-sex siblings compared to those with opposite-sex siblings. Sutton-Smith et al., also reported that first-born children compared to second-or third-born children in one-parent families and those in larger families compared to children in smaller families were more adversely affected. This suggest that the experience of one-parent rearing may be different for children in various family configurations. Older or first-born children in one-parent homes may be required to assume some of the household and family responsibilities. The added responsibility for care of younger siblings and household could take time away from academic study. Further studies are needed on how children in one-parent families organize and spend their time before we can assess the effects of varied family configurations and how they interact with one-parent family status.

Sex of The Child

Because of the preoccupation with father absence and its impact on sons, research on one-parent rearing frequently has been confined to one-sex samples. In most instances where both sexes are studied, males seem to suffer greater deficits in cognitive performance, although as we have discussed earlier, the differences in cognitive performance on tests between children in one-and two-parent families are generally small and usually not significant. However, when directional differences are noted, boys from one-parent families generally score lower on quantitative aptitude tests, compared to boys from two-parent families, and girls from one-parent families score higher than girls from two-parent families on verbal aptitude tests. On achievement tests and teacher-assigned grades, boys from one-parent homes are more likely than girls to receive lower scores. Here again, the differences between the scores of the two sexes of children in one-parent homes are generally small, although the trend is for boys to receive lower scores.

We have discussed previously the sex-identification and tension-interference explanations for differences in the cognitive functioning of children in one-parent homes. Our synthesis of research on performance on tests of aptitude and achievement and classroom grades suggest that neither theory by itself offers a sufficient explanation for differences reported. Perhaps the stress of family disruption and change in family environment may reduce the typically superior quantitative scores compared to verbal scores achieved by males, but the pattern of higher quantitative and lower verbal scores for males remains intact. In most cases, mean scores in quantitative measures for males are higher than quantitative scores for one-parent females. The difference lies in the magnitude of difference between same-sex peers in the two family groups.

In other words, the difference between mean quantitative scores of males in one-and two-parent homes is larger than the difference between mean quantitative scores of females in one-and two-parent homes. This suggests that males are more adversely affected than females in one area of cognitive functioning -- the area in which they usually excel compared to females. On the other hand, females in one-parent families show enhanced verbal aptitude, even above that which is normally shown when female verbal scores are compared to males.

It is possible that a combination of factors is responsible for these findings. Males, compared to females, appear to have a tendency to excel in quantitative areas of test performance. Boys who have lost a salient male figure with whom to identify and to interact may be without the necessary environmental conditions that lead to the development of this aptitude for superior quantitative performance. In contrast, females, compared to males, appear to have a tendency to excel in verbal areas. Parental loss, specifically, the absence of a father, does not interfere with the development of this verbal potential, and may even enhance environmental conditions leading to the development of verbal aptitude by providing increased interaction with a female parent.

The sex-identification and environmental-interaction theory does not, however, explain depressed performance on achievement scores in both verbal and mathematical areas for boys and girls. A more appropriate explanation may be one similar to tension-interference hypothesis discussed earlier. It seems likely that stress may interfere with performance on tests that measure <u>actual</u> learning and not affect performance on tests that measure ability or aptitudes for learning. The stress accompanying parental conflict or marital dissolution may interfere with the day-to-day academic functioning

of children and result in depressed performance on achievement tests. The lower grades received by boys compared to girls in one-parent homes may be due to other factors, such as their classroom behavior, which influence teacher ratings of performance. This possibility is discussed in more detail in a later section.

We concluded from our synthesis of research studies on effects of one-parent rearing that the academic performance of boys compared to girls is more adversely affected, but we must emphasize that the differences reported are small.

Socioeconomic Status of The Child's Family or Household

As Shinn (1978) points out, the large majority of American studies on the effects of one-parent families have been conducted with lower-and working-class families. Some studies that have examined socioeconomic factors have found small net effects of family structure when proper controls for socioeconomic status are introduced (e.g., Ferri, 1976; Lambert and Hart, 1976). However, nearly all investigations either fail to introduce any controls for social class, or they construct improper and insufficient indices of socioeconomic variation. For example, it is common practice to measure the "social class" of a household by the occupation of the head and to categorize such information into broad occupational strata like manual/nonmanual or lower-class/working-class. These broad designations mask large socioeconomic heterogeneity within the categories-- variations in education, income and other factors that may have separate and nonidentical "socioeconomic" effects on the relationship between family structure and cognitive performance. Even when composite indices of social class, such as the Hollinshead scale, are used, there remain potential nonidentical effects of class categories.

Controlling or categorizing families by social class is even more problematic with studies of divorced one-parent families (Mueller & Parcel, 1981). For example Ferri (1976) measured social status in terms of the family status before divorce and assessed economic level in terms of the family situation after divorce. In contrast, Santrock (1972) measured social class after parental separation and used the mother's occupation as an indicator when information on the father's occupation was not available. In addition, the comparison of heads of nuclear families, who typically are men, with the heads of divorced and separated families, who typically are women, is not an equal one; the same nominal occupational title does not entail the same economic attributes for females as it does for males.

Apart from imprecise measurement of socioeconomic level, research on the consequences of divorce and one-parent rearing on children's achievement is hampered by inattention to changes in level that are associated with family dissolution (Herzog & -Sudia, 1973). Divorce entails changes in income and economic resources, even if the household head retains the same occupation. Hampton (1975), reporting on 5000 American families that were interviewed annually over a six-year period, showed a larger reduction in the economic circumstances of separated wives than of their former husbands.

Elder (1974) has demonstrated that sudden changes in economic fortunes, even in families not undergoing shifts in social class or experiencing prior marital discord or dissolution, can have marked consequences for the personality development and achievements of children, even adolescents. However, research on a broader range of possible effects of changed economic circumstances following divorce does not find consistent results (e.g., Fulton, 1978; Coletta, 1978; Hetherington, Cox, & Cox, 1979a).

Although several studies suggest a close connection between economic factors and the effects of one-parent rearing on scholastic achievements, the relationship among these factors is a complex one. For example, even when we find that all the variance predicted by family structure can be explained by the socioeconomic status of the family, we cannot clearly identify the causal links in the process. Divorce or death of a spouse may create the low socioeconomic conditions within the family. These conditions in turn can have an impact on children's achievement. It is likely that both the socioeconomic status of the family and divorce play a part in scholastic achievement.

Race of The Child

A considerable body of literature has been accumulated regarding the achievement of children in black one-parent families. This may be due in part to the large numbers of black children in one-parent homes. Whereas roughly fifteen percent of all children under age 18 were black in 1978, fully 36 percent of all children in one-parent households in that year were black. These children constituted 20 percent of all those under age 18 living with a divorced mother, 33 percent of those living with a widowed mother, 44 percent of those living with a separated mother and 75 percent of those living with a never-married mother. The larger proportion of single-parent black families within the black population,

compared to the proportion of single-parent white families within the white population, has led to the stereotype of the typical black family as being fatherless and on welfare. In actuality, most black children are raised in two-parent families.

The research on black families has been based largely on a unsubstantiated model of family functioning. Over a decade ago, the "Moynihan report" (Moynihan, 1965) alleged a major connection between the "disorganized," "martriarchal" black family and the lower scholastic achievements of the black minority. However, evidence is lacking that black families headed by a female constitute less beneficial environments for the learning of achievement values and the development of high cognitive abilities than do nuclear or intact families. Most studies of black children reveal small and nonsignificant effects on one-parent rearing on achievement tests (e.g., Hirsch, Scheinfeld, & Jackson, 1972; Shinn, 1978).

Deutsch and Brown (1964) like many others have reported statistical differences between the I.Q. scores of black and white elementary school children. Within each race, the social class differences favored children in the middle classes, and although these differentials were appreciably larger among whites than among blacks, there were no interactions of race and SES (1964: Table 3).

Fowler and Richards (1978) compared lower-income black second-graders from intact homes with those from homes where the father had been absent since the child was age 4 through second grade and was without a father surrogate or extended family. Even within the low-income stratum, significant social class differences were observed. Controlling for social class, Fowler and Richards found father absence related to depressed scores on standardized

tests in mathematics at grade 2 but not on tests of language arts or reading. By contrast, kindergarten tests of educational readiness at age 4 revealed no comparative disadvantage for lower SES black children as a function of father absence, a finding that corroborates Hess et al. (1968).

The small effects of one-parent rearing on achievement in black children could arise from a number of sources, including the smaller variability in test scores (e.g., Deutsch & Brown, 1964); the prevalence of one-parent rearing, or the substitution of child care from other kin or parent surrogate. Studies of parental characteristics have found that black mothers whose marriages have been terminated or who never were married are no less aspiring for the educational achievement of their children than are mothers in intact marriages (e.g., Kandel, 1971). Kandel also found that "matriarchy," whether defined as a structural feature of the family or as an interactional feature of family relations, was unrelated to educational aspirations, I.Q. scores, self-reported grades, and school records of class rank (1971: 1012). More descriptive data on the processes of childrearing in one- and two-parent black families are needed before we can draw any conclusions about the relation between black family structure and children's achievement. As we have suggested, the experience of living in a one-parent black family may be very different from the experience of living in a white one-parent family. The presence of extended kin and community networks among black families may be one factor influencing the experience for children. This and other potential differences in one-parent family environments among different racial and ethnic groups are discussed in a later section of this report.

School Behavior and Work Patterns

In this section we will summarize what is known about school behaviors and school work patterns that may be associated with achievement of children from one-parent homes. This topic is seldom studied independently, but usually is addressed as part of a larger question regarding school achievement. The studies we have reviewed focus on a range of grade levels and vary in procedures used to obtain information from schools and teachers. The types of information include descriptive data on school attendance, tardiness, discipline referrals and teachers' ratings of students' attitudes toward school and study behaviors within the school setting.

The adequate measurement of study and social behaviors is even more difficult and controversial than the assessment of achievement. Most studies of school behavior rely on teacher ratings. Direct observations of behavior and standardized measurement instruments are rarely used in gathering information about the work and interaction patterns of children from one-parent households. There is evidence that teacher and peer ratings of children from one-parent homes are subject to bias. For example, teachers, peers and parents continue to view the behavior of preschool boys from divorced families in an unrealisitically negative fashion even after their behavior has improved markedly in the two years following divorce (Hetherington, et al., 1979b). It should be noted, however, that even at two years following divorce, observations showed that although the behavior of boys from divorced families had improved, they were still showing more verbal aggression, dependency, attention-seeking behavior, shorter attention spans and task persistence, and less helping behavior than boys from nondivorced families. The lag in teacher perception of positive changes following divorce does not occur with reference to girls.

Teacher bias is substantiated to some extent in a recent experimental study by Santrock and Tracy (1978) in which teachers were asked to view and

rate the same vidoetaped behavior of a child who was presented as coming from an intact or divorced home. Teachers rated the child of divorced parents more negatively than the child of non-divorced parents in dimensions of happiness, emotional adjustment and the ability to cope with stress, but not on other factors, such as, anxiety and aggression. However, teachers' perceptions of children's behavior and attitude toward school may be important in itself, despite its questionable relation to actual behavior. It is possible that negative evaluations by teachers of academic achievement might be related to children's disruptive behavior in the classroom. Parents, teachers and peers react negatively to uncontrolled, impulsive behaviors; their responses may influence the experiences if children both in the home and in the school.

The studies we have reviewed have been divided into three general areas of children's functioning in the school setting: attendance, conduct or social behavior, study patterns and attitudes toward school (Table 14).

(Insert Table 14)

Attendance

Studies comparing children of one-and two-parent households report consistent differences in school absenteeism, tardiness and truancy. In an effort to study patterns of achievement and school behaviors of children from one-parent homes, the Kettering Foundation and National Association of Elementary School Principals gathered data from school records of approximately 18,000 students in fifteen elementary and secondary schools. In a preliminary report of findings, Brown (1980) and Evan and Neel (Note 2) reported significant differences in the number of absences and incidents of truancy and tardiness among students in one-parent homes compared to those living with both natural parents or one natural parent and a stepparent. Differences among family groups were greater for students in secondary schools. For example,

the average number of absences for one year at the secondary level for students in one-parent families was 17.8 days compared to 12.6 days for students in two-parent homes. Significant differences in the socioeconomic backgrounds of children in the one- and two-parent family groups do not permit us to attribute these difficulties solely to one-parent family status. Results of the analysis for students from lower-income families were not presented; nor were data on the ethnic or racial backgrounds of students reported. However, several studies that have provided adequate controls for sociocultural background have reported fewer absences and fewer instances of tardiness among children in two-parent compared to those in one-parent homes (Collins, 1970; Hetherington et al., 1981; Kelly et al., 1965; McNeal, 1973; Scott, 1974).

Reasons for absence or tardiness are never specified in these studies, but one could speculate that the reasons for not attending school are different for students in one- and two-parent homes. Hetherington et al (1981) found that children of divorced parents were more likely than children in nuclear families to have erratic home schedules for meals and bedtimes. Single parents burdened with child care, work and household responsibilities are more likely to rely on children, particularly adolescents, for emotional support and assistance with the practical problems of daily life, such as household tasks and taking care of younger siblings (Kelly & Wallerstein, 1979; Weiss, 1978). It might also be necessary for these students to take on part-time jobs while attending school in order to assist with the financial support of the family or, on occasion, to stay home from school to assist with household and family responsibilities. In nuclear families, there are two adults to share these tasks, and although one may take primary responsibility for care of children and home, another adult is available to assist in times of emergency.

The relation between number of school days missed or days late for school and school performance is not clearly established. Interestingly, a study by Scott (1974) found a significant association between school absence and achievement for children in intact families, but not for children in one-parent homes. It is not unreasonable to assume that absence from school for whatever reason can have direct as well as indirect effects on school performance. Time away from the classroom can mean less time spent in learning basic skills and developing understandings needed for more advanced study. Absences and tardiness also create additional disruptions for school administrators and classroom teachers. Failure to attend school or to arrive on time may be interpreted by school personnel as a lack of motivation and interest on the part of students and parents. These impressions may influence teachers' evaluations of students from one-parent homes as well as their expectations for performance. The responses of teachers may determine how successful the school environment can be in helping children learn to work and play effectively.

Conduct and Social Behavior

Studies comparing the classroom social behavior of students from one- and two-parent homes consistently describe children from one-parent homes as being more disruptive, aggressive, immature and less self-controlled (Cox, 1975; Hetherington et al., 1979b; Santrock, 1975; Santrock & Tracy, 1978). These children are more likely to be referred for discipline problems and to receive detentions or suspensions from school for problems in conduct (Brown, 1980; Evans and Neel, Note 2; Hersog, 1974).

Felner, Stolberg, and Cowan (1975) collected teachers' ratings of adjustment for school children from nuclear families, those from families where parents had separated or divorced, and those who had lost a parent

through death. The three groups of children were matched on sex, grade in school, school location, socioeconomic status, and previous participation in a primary mental health project. Marked differences were found between groups on the measures of self-control. Children from divorced or separated families had higher overall maladjustment scores and were rated as being more restless, impulsive, obstinate and disruptive in class than were children from nuclear families.

A similar pattern of observed and teacher-rated impulsiveness, distractibility, oppositional behavior, tantrums and aggression in preschool children from divorced homes was found by Hetherington et al., 1979b. The differences on observational measures between children in divorced and nuclear families diminished over the two-year period following divorce, although boys from divorced families continued to exhibit more maladaptive behavior than other groups, and were so rated by their teachers and peers. Authoritative control by the mother plus a high degree of household organization immediately following divorce were related to self-control of children one year after divorce. These factors, in turn, were correlated with scores on performance and problem-solving scales on the WPPSI at two years after divorce. This result suggests that under stressful conditions young children may require a more structured and orderly environment in order to function effectively. Under conditions of low stress or with older children who are better able to organize their environments, these factors may not be so critical.

Lack of self-control has also been found with older subjects from father-absent homes. Seigman (1966) found that groups of male law and medical students who had been without a father for at least one year from age one through age four scored higher than did boys with fathers who had heen continuously present of self-reported antisocial behaviors, such as parental disobedience, property damage and drinking.

From these and other studies we can conclude that children from one-parent

families, particularly separated or divorced families, are perceived and labelled by their teachers and others as having conduct problems and difficulties in peer relations (Hardy, 1937; Hess & Camara, 1979; Hetherington, et al., 1979b; Holman, 1953; Gregory, 1965; Layman, 1961; Leiderman, 1953; McDermott, 1968; Miller, 1961; Mitchell & Wilson, 1967; Pemberton & Benady, 1973; Wallerstein & Kelly, 1976). The difficulties these children experience socially could be another factor leading to problems in school academic performance. Disruptions in the class interfere with time spent on teaching and learning. Single parents may be able to reduce some of these difficulties by providing a predictable structured home environment for children during times of stress. Teachers' reactions to disturbances in the classroom may also determine how supportive the school environment is for these children. The stress accompanying family change and the added responsibilities associated with living in a one-parent household coupled with a non-supportive school environment may affect not only children's performance on achievement tests, but also their attitudes toward school and motivation to learn.

Study Patterns And Attitudes Toward School

The relation of study behaviors to learning and academic performance is not well documented. Although most educators would agree that factors such as preparedness, concentration on tasks, persistance and enthusiasm for learning are important qualities for a successful learner, there are few empirical studies that provide us with any reliable information on how these factors relate to achievement. The measurement of study behaviors is also problematic; most studies rely on teacher reports or ratings of students' work styles in the classroom. The validity and reliability of these estimates are seldom examined. Despite the problems of method and definition, descriptive data on children's work or study styles in the classroom may provide evidence of interference in

cognitive functioning due to high levels of stress or anxiety. One may reasonably expect that teachers' perceptions of behaviors may influence evaluations of performance that are represented in grade-point averages.

Studies that have examined the responses of children in the immediate period surrounding separation and divorce usually have found indicators of anxiety, such as fearfulness, inhibition, worry, regressive behaviors, habit disturbances and neediness (Hess & Camara, 1979; Hetherington, et al., 1979a; Kelly & Wallerstein, 1976; Wallerstein & Kelly, 1974, 1975, 1976). These effects are related to parental conflict, to the quality of the mother-child and father-child relationship, and to the time lost in the presence of the father. Jacobsen (1978a, 1978b) found these relationships to be more marked for seven- to thirteen-year old children than for three- to six-year old children. Wallerstein and Kelly (1974, 1975, 1976) report that the form anxiety takes varies with the age of the child. Preschool children exhibited regressive behavior, separation anxiety, and irritability; elementary school children manifested sadness; and adolescents were anxious about their futures. In any case, high levels of anxiety often interfere with learning and performance (Ruble & Boggiano, 1980; Hill, 1977). However, high levels of anxiety might be one factor that explains differences in children's style of study and performance on tests.

The few studies of children's classroom work behavior have reported differences in the study habits of children from one-and two-parent families. In general, one-parent family children are described by their teachers as having greater difficulty in concentrating and attending to tasks, completing

tasks within a specified time period, and working independently (Herzog, 1974; Hess & Camara, 1979; Hetherington, et al., 1981; McNeal, 1973).

Hess and Camara (1979) compared teacher ratings of nine-to eleven year-old children from divorced and intact family groups on scales of concentration, attention, completion of tasks, and preference for group versus independent activity. Children were matched on age, sex, and classroom assignment. Significant differences were found in teachers' ratings with children from divorced families being seen as having less effective work styles than were children from intact families. Although boys in general scored lower on these dimensions, the differences between girls' scores in the two family groups were most striking. Girls from divorced families compared to those from intact families were seen as less competent in their study patterns in the school setting. This is not in accord with the findings of the Hetherington, et al., (1981) study of preschool children which reports more distractibility, and less task persistence for boys than girls from divorced parents as obtained both by observation and teacher and parent reports.

Frequently, these differences in study behaviors are intepreted by teachers as representing a lack of motivation by these youngsters. Teachers in Herzog's (1974) study distinguished between father-absent and father-present boys in terms of their attitudes toward schoolwork. Boys whose fathers were absent during the first five years of the child's life or during the ages of two to four were more often labelled "lazy" than those with fathers present during those years. Boys in the father-present group were described as quiet, cooperative and as boys who "tried hard." Teachers described the boys with a history of continuous father-absence as "troublesome" and unwilling to conform to school expectations. Interestingly, teachers' ratings of children's attitudes and behaviors were significantly correlated with scores on teacher-graded

examinations in comprehension, composition and arithmetic and a standard reading test, but were not correlated with performance on standardized tests of IQ.

Two studies failed to find significant differences between the school work habits of children in lower-and lower-middle-income "broken" and intact families (Birnbaum, 1960 ; Collins, 1970). However, reasons for broken home status and duration of living in a one-parent household were not analyzed in these studies. The effects of divorce on children's study habits may not be long-lasting, unless there is continued conflict and family disorganization. However, temporary stress that interferes with children's ability to concentrate and attend to tasks in the early grades could result in a failure to learn basic skills needed for study in later grades. This could produce lags in achievement that last beyond the time of stress. Further research is needed before any conclusive statements can be made about the causal connections among family structures, children's study habits and school performance.

To summarize, our review of research studies on school behaviors and school work patterns reveals that compared to children in two-parent homes, children from one-parent households are absent from school more frequently, are more disruptive in the classroom, and may have less effective study styles in their school work, particularly in the two-to three-year period surrounding the time of family disruption. All of these factors may explain in part differences in teacher evaluations of children's achievement and in grade point average. Teachers' reports of depressed achievement among children from one-parent households may be based on their reactions to disruptive classroom behaviors and classroom work styles that do not conform to school expectations rather than on the actual academic performance of these children. We have little information on the relation between teachers' evaluation or grade-point average to performance on standardized achievement tests. However, school evaluations of student work may have their own unique impact on children's achievement in

the student's school setting. For example, negative evaluations, particularly during times of stress, may affect motivation to learn and decision to continue schooling. Depressed grade averages may also reduce a students' eligibility for scholarship assistance for further schooling and affect future academic opportunities.

Summary and Discussion

In each of the sections of our review, we drew attention to the often contradictory and inconsistent state of accumulated research on the effects of one-parent rearing on children's achievement and intellectual functioning. We have noted the rapid changes in the social context of divorce and one-parent rearing as an experience of childhood that may restrict the applicability of all but the most recent research to contemporary American society. In addition, generalizations from past research are limited because of methodological shortcomings. Based on the analysis of all available research, several themes do emerge concerning the relation of intellectual functioning and one-parent household status.

Standardized vs Teacher-Ratings of Achievement

First, differences between groups of one-parent and two-parent family children on tests of intelligence and aptitude are usually small and decrease when socioeconomic status is taken into account. Children in one-parent homes tend to score on IQ tests an average of approximately three to four points lower than do children in two-parent families. Scores on achievement tests between groups usually reflect less than one-year difference. However, an overwhelming number of studies report lower grade-point averages based on teacher-assigned grades for children in one-parent homes compared to those in two parent homes. Given the data available on intellectual test performance of these children, it is unlikely that children reared in one-parent homes are experiencing any serious intellectual deficit.

What does account for the depressed evaluations of performance in the school setting? In our review, we have suggested a complex interaction among student attitudes and behaviors, teacher attitudes, and home conditions that may result in poorer achievement performance as measured by teacher-assigned grades and grade point averages. Children in divorced and in other one-parent families tend to be more disruptive in the classroom, have less efficient work or study h[illegible]its, and tend to be absent, truant, and tardy more often than children who live in homes where two adults are present. These behaviors may interfere with application of knowledge as evidenced in poorer quality of classroom work, failure to complete assignments, or attend to tasks.

A second interpretation is that children who do not conform to school routines and requirements are perceived by their teachers as less competent. Research evidence on teachers' assessment of student performance points to factors other than intellectual ability or quality of work in determining student evaluations. For example, papers with better handwriting receive higher marks from teachers, regardless of the quality of their content (Markham, 1976). Other data tend to show that students who are obedient, conforming and industrious tend to receive higher grades than those who are rebellious, nonconforming and lazy (see Lindgren, 1980).

An alternative explanation is that the conditions of family life surrounding separation and divorce affect children's functioning in the school setting and that the outcomes of family disruption will be modified by characteristics of the home and school. For example, Hetherington et al.'s (1978b) study showed that mothers' maturity demands and their authoritative control, combined with a high degree of household organization following divorce were correlated with measures of children's attention span, persistence, and self-control one year following divorce. These, in turn, were correlated with performance, arithmetic, and problem-solving scales on the WPPSI at two years after divorce. These authors have suggested that under

stressful conditions children may require external controls provided by a structured and orderly environment since they may have difficulty exerting self control.

This study found a remarkable similarity in the attributes of the home and the school that were associated with more rapid and satisfactory adjustment of children from divorced families. In both settings an organized, predictable environment, with clearly defined and consistently enforced standards, roles and responsibilities, and a responsive nurturant atmosphere were associated with effective cognitive functioning, low rates of behavior disorders and more adaptive behavior in children. These home and school characteristics are similar to those of authoritative parent behaviors described by Baumrind (1971). The role of structure, organization, rule enforcement, and assignment of responsibilities, or maturity demands, was more important for children from divorced than from non-divorced families. These characteristics in the school were also associated with greater self-control in children from non-divorced families with high levels of parent-child or marital conflict. This seems to support the position that young children who have undergone the stress, inconsistency and transitions associated with divorce or high rates of family conflict require a more predictable and structured environment than do children not exposed to such difficult life experiences. The structure and control factors were more salient for boys; responsiveness, warmth and maturity demands were more salient for girls. However, all of these factors in the school were significantly related to positive outcomes in children of both sexes from divorced families two years after divorce.

Until very recently there has been a pervasive pessimism about the effects of schooling on child development. Since the time of the original Coleman (1966, 1975) reports and the work of such investigators as Basil Bernstein (1970) and Christopher Jencks and his colleagues (Jencks, Smith, Acland, Bane, Cohen, Gintis, Heyns & Michelson, 1972), family influences, particularly early family influences, have been thought to dominate the development of children. It is only recently,

in the work of such people as Michael Rutter and some of his British co-workers (Rutter, Maughan, Mortemore, Ouston, & Smith, 1979), that the characteristics of schools have been found to attentuate adverse outcomes such as delinquency that might have been expected for children coming from disorganized households and economically deprived, neighborhoods. By two years after divorce "some schools were able to exert a positive and beneficial influence on their pupils' progress, to some extent protecting them from difficulties; other schools were less successful in this" (Rutter et al., 1979, p. 28).

Some researchers have speculated that the occurrence of stressful events such as the loss of a parent or adverse environmental factors associated with life in a single-parent family may contribute to a sense of lack of personal determinism (Hetherington, 1972; Rotter, 1966). In many theories of achievement, perceived internal control has been viewed as an essential prerequisite to achievement striving. Although the relationship between family structure, locus of control and achievement obviously is a complex one, it is a topic that warrants further study.

Attitudes toward the self, particularly as they relate to self determination, are also associated with academic achievement (Coopersmith, 1967), problem-solving strategies and responses to success and failure. High self-esteem is associated with authoritative parent behaviors involving warmth, communication, and firm, well-defined controls (Coopersmith, 1967). Studies of the self-esteem of children in mother-headed one-parent households yield inconsistent results. These range from no differences in self-esteem between children in nuclear and mother-headed families (Thomes, 1968; Rubin, 1974) to lower self-esteem in children from one-parent families (Cox, 1975; Hetherington, 1972; Young & Parish, 1977; Parish & Taylor, 1979; Rosenberg, 1965; Rouman, 1956; Tiller, 1958) and to higher self-sesteem in particular groups of children from one-parent

families (Gordon, 1972; Hunt & Hunt, 1975, 1977). What is clear is that any relation there may be between divorce or living in a one-parent home and self-esteem, or between self-esteem and achievement, is moderated by a variety of other factors and that only selected aspects of the self-concept may be affected.

Finally, as we have suggested earlier, the need for single-parents to rely on their children for assistance with household and child care tasks and routines of daily living may result in less time available for these children to attend to achievement-related tasks. Children who are expected to assist with preparation of meals, care for younger siblings, and perhaps even find part-time jobs to assist with financial management of the household may be unable to concentrate their efforts on school work. This in turn may result in lowered grades and less positive evaluations by teachers and school personnel.

Sex Differences in Patterns of Cognitive Functioning and Social Behavior

The second major theme emerging from our review is that the intellectual functioning and social development of boys may be seen as more adversely affected by living in one-parent homes than is the functioning and development of girls from similar family circumstances. The analysis of patterns of cognitive functioning revealed that one-parent boys, but not girls, scored lower on quantitative tests of aptitude and achievement compared to boys in two-parent homes. One-parent family girls, on the other hand, but not boys, scored higher on tests of verbal aptitude and achievement than did girls in two-parent homes.

Numerous studies have suggested that the impact of marital discord and divorce on emotional and social adjustment are more pervasive and enduring for boys than for girls (Hess & Camara, 1979; Hetherington, et al., 1978a; 1979a; 1979c; Wallerstein, 1978; Rutter, 1979b; Tuckman & Regan, 1966). Boys from divorced families, in contrast to girls from divorced families and children from nuclear families, show a higher rate of behavior disorders and problems in

interpersonal relations with parents, teachers and peers. Why should boys show more prevalent disorders in response to family disharmony and separation? When there is conflict in a family, boys may be more directly exposed to it and may receive less support from parents, teachers and peers in response to their expressions of distress than do girls (Hetherington, et al., 1981). This may be in part because of sex-stereotyped notions that males should be able to control their feelings and be less needful of support than are girls. In addition, the responses of boys to marital discord and distress may be more overt and noxious than those of girls. Finally following divorce most children are in mother-custody homes. The separation from the father may represent a more important loss for boys than for girls, both as a figure of identification and as a disciplinarian. A recent study by Santrock and Warshak (1979) found that girls in father-custody families exhibit some of the same difficulties in social behavior as do boys in mother-headed, one-parent families, which suggests that separation from a same-sexed parent may be particularly difficult for children.

Epilogue

The factors that mediate intellectual and achievement outcomes in children from disrupted or divorced families involve a complex interaction of individual difference, social, motivational and cultural factors. Most children find divorce to be a stressful life transition, but the long term effects of marital disruption on children may be modified by effective family functioning and positive experiences of the child in extra-familial settings such as the school, peer group, neighborhood or work. The functioning of children and parents during and following divorce should be considered in relationship to the larger social context. Although much has been written about the stresses and support systems for divorced adults, little is known about the interrelation between stresses and support systems for children in one-parent families. This is an essential area of inquiry in understanding the cognitive, emotional and social sequelae of divorce for children.

Recommendations for Future Research

Our recommendations for future research illustrate directions which stress methodological strategies and focus on specific substantive relationships that our review indicates may be most promising.

-- Divorce and life in a one-parent household need to be viewed in terms of a life course perspective. The following factors should be emphasized in future studies: the developmental status of the child at the time of separation and divorce and at the time of assessment, changes over time in the stresses and support systems available to children, and both short- and long-term outcomes of divorce. Although longitudinal studies are ideal for answering such questions, useful information can be gained from cross-sectional studies. A combined short-term longitudinal and cross-sectional design probably is most cost-effective in investigating such issues.

-- Prospective longitudinal research designs are an essential methodological tool for the developmental approach to understanding divorce. Developmental status of the child, siblings, and parents are central dimensions of the antecedents and consequences of divorce. Divorce itself seems to have some statistical relationship to a family's stage in the "family cycle" (Glick, 1947). Thus, one line of research should sample from a cohort of adults as they marry and follow these marital unions and their offspring over time.

-- Studies using multiple methods should be encouraged since each method has its own limitations and advantages. A multifaceted and representative view of the functioning of families and the behavior of children can be obtained from convergent findings using diverse methodology.

-- Large-scale population samples are essential to properly gauge the magnitude of effects of divorce and life in a one-parent family. Structured

interviews and self-administered questionnaires usually are of unknown reliability and validity. These measures often fail to tap the behaviors and diachronic processes that comprise interactions among family members and that constitute divorce and its consequences for parents and children. Experimental and observational methods may reduce the ecological validity of studies. Furthermore, the relation between self-report measures and more direct assessments of behavior often has been modest or even insignificant.

Some combination of methods might be employed within a single program of research in a single population sample. Normative or parametric measurement in one subsample can occur side-by-side with observational or experimental studies in other subsamples so that the findings of the latter can be calibrated against the parameter estimates from the former. An intensive study using a variety of multiple methods on a subsample of a larger scale representative survey might be done in order to identify the relationships among methods, the unique advantages and disadvantages of various methods, and which methods best predict various facets of educational and achievement outcomes. Methodological studies are seldom undertaken because they often seem unexciting; however, they are the foundation of good science.

-- Divorce and its impact on children should be viewed from both a family process and an ecological perspective. The relationship between divorce, family structure and family functioning as it interacts with factors in the larger environment to shape children's achievement should be studied. Family functioning may change following divorce. It is important to identify how these changes in family functioning modify social, cognitive and educational outcomes for children.

-- Comparative studies are needed of family functioning and child development in diverse family forms such as the mother- or father-custody one-parent household, the family composed of one parent and another adult, and stepparent families.

This pluralistic approach to families should be undertaken to identify the differences, strengths, and problems in diverse family configurations and their relation to the adjustment and achievements of children in the school setting. The psychological implications of rearing in one-parent households are not likely to be identical across various types of one-parent situations. Descriptive, comparative research that provides insights into childrearing attitudes and practices of parents in various cultural, socioeconomic, and racial groups is needed. We need to recognize that specific childrearing practices that are beneficial to a child's development may differ from one sociocultural context to another.

-- The functioning of children and parents during and following divorce should be considered in relation to the larger social context -- the peer group, school, neighborhood, and work setting. A promising line of inquiry is the examination of the roles of the peer group, extended family, the church and the school in exacerbating or ameliorating adverse outcomes of divorce and in promoting positive outcomes. The attributes and function of schools in facilitating healthy adjustment and achievement in children with divorced parents should be identified.

-- A related topic of importance is the "goodness of fit" between the teaching and social environments provided by different types of families and schools in enabling the social and intellectual development of children during separation and divorce and life in a one-parent household.

-- Achievement in school, especially the duration of school attendance, seems to be linked to life-course decisions involving work, marriage, and childbearing. Developmental research on children's and adolescents' conceptions

of marriage, sex roles, family role relationships, parenthood, and children, as influenced by experiences in their own families, should be carried out. Related work on life goals and personal timetables for achievement of these goals should address the proposition that children from one-parent families may not be following the same life-course trajectories as children from nuclear families.

-- The life experiences, stresses, family and social processes associated with sex differences in outcomes following divorce need further investigation. More information is needed about the effects of living in a father- or mother-headed one-parent household and in stepparent families on the cognitive and social competencies of boys and girls.

-- The relationship between family structure, employment, and the cognitive and social development of children should be examined. There are suggestive findings of complex interactions between parental employment patterns, family structure, support systems and outcomes for girls and boys.

-- The role of emotional, personality and motivational factors in the cognitive development and achievement of children in one-parent families is not well understood. Differences between children in one- and two-parent households in sex-typing, anxiety, self-control, independence, self-esteem and locus of control have been reported. Although these differences have not been consistently obtained they bear further investigation since they have beeen found to be associated with achievement. The relationship between such variables, family structure and achievement seem amenable to both field and experimental studies.

-- Finally, studies need to be undertaken which investigate the experience of family disruption, divorce and life in a one-parent family from the perspective of the child. More is known about how parents and teachers perceive these experiences and the child's behavior than how the child views his or her own situation. Clinicians often state that degree of trauma is how the dependent individual defines and perceives a stressful experience. Little is known about how children in divorced or one-parent families perceive the loss of a parent,

family conflict, economic changes, their parents, teachers, peers, schools, neighborhoods, or themselves, or what constitutes a support system for them.

The child's perspective may be critical in identifying life changes, support systems, family, school and community factors, or intervention strategies which may lead to the development of social and intellectual competence in children from both one- and two-parent homes.

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Table 1: Dimensions of Methodological Adequacy

Research Design and Methods

- Subject selection
  - Clinical or general population
  - Probability sample or purposive/accidental sample
- Presence of control or comparison group with adequate matching criteria
- Overall "ecological validity" of research design and measures
- Indicators of causal or process variables
- Adequacy of measures
  - Standardized or ad hoc measures
  - Assessment of validity and reliability of measures
  - Reprentativeness of measures
- Longitudinal or cross-sectional design for adducing developmental change

Analysis

- General design correlational/experimental; multivariate/univariate
- Hypothesis testing or descriptive
- Risks of accepting false positive findings
- Statistical controls for correlates or qualitative aspects of one-parent experience
  - --Reason for loss or separation
  - --Age at onset, duration, permanence of loss
  - --Sex of child
  - --Race of child
  - --Birth order, family size and composition of household
  - --Component dimensions of socioeconomic status
  - --Changes in household composition, location, and socioeconomic circumstances following divorce, death, separation of parents
  - --Stage of family in life cycle
  - --Developmental status of child at assessment
  - --Support systems

Table 2: Parental Absence, Children's IQ and Academic Achievement, Measured by Standardized Tests.

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
ALBERT (1971)	19 "exceptionally gifted" children with IQ's above 180, other "gifted" children.	Compared one-parent vs. two-parent family status.	None	IQ	Gifted and exceptionally gifted children were apt to have lost a parent before adulthood.
ALTUS (1958)	50 male college freshman.	25 divorced parents 25 intact homes	None	ACE	Linguistic scores were higher for divorced parent group (M=6 points); quantitative scores did not differ.
BERNSTEIN (1976)	117 middle-income family 5th graders	103 lived with both parents 14 lived with mother and no father. F absence due primarily to divorce; some continued contact with fathers.	SES controlled	Iowa Test of Basic Skills (5th grade) M-V discrepancy examined for individual students.	FA boys and FA girls had lower math scores than FP children, although differences were significant only for girls.
BIRNBAUM (1966)	180 boys enrolled in L.A. high schools.	90 broken home mother-headed 90 intact	Upper and lower income SES groups for both family types; Upper income $\geq$ 6,600/ year. Lower income $<$ 6,600/ year. Age, grade, IQ, SES.	Standardized scores in reading comprehension and vocabulary.	No significant differences reported between family groups. (Means not available, only statistical differences reported.)

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
BLANCHARD AND BILLER (1971)	44 white, 3rd grade boys from working and lower middle-income families.	11 FA before age 5 11 FA after age 5 11 low father present (< 6 hr./week) 11 high father present (> 2 hr./day) FA due primarily to divorce or separation.	Age, IQ, SES, presence of male siblings.	Stanford Achievement test (3rd grade)	Late father-absent and low father-present had higher performance scores than did the early father-absent group but had lower scores than high father-present group. High father-present group scored highest on every index. Found a lack of significant relationship between academic functioning and age, SES, sibling presence, maternal availability, maternal employment, reason for father absence and availability of stepfather.
BROMAN, NICHOLS AND KENNEDY (1975)	26,094 white and black 4 year olds from the collaborative Perinatal Project.	19,078 FP 7,016 FA	Race, sex, 3 levels of SES	Stanford-Binet IQ	IQ's were 1-5 points higher among children with FP prior to birth. The effect was greater for whites than blacks. FP was not a significant predictor of IQ when SES and mother's educational level were taken into account.
CAMARA (1979)	32 white middle-income boys and girls ages 9-11 in California.	16 Divorced 16 Intact Families	Age, grade school	School achievement tests on reading equated to percentiles on MAT	Boys and girls from divorced families scored lower on reading tests than children in intact families although differences were not significant. M differences between family groups = 5.5 points. Differences

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
CAMARA (con't)					between girls in divorced and intact groups were larger than differences for boys. (M = 8.2 points, girls; M = 2.0 points, boys.)

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
CARLSMITH (1973)	40 male sophomores at Harvard from middle and upper middle-income families.	20 FA boys separated from their fathers before 6 months. FA due to World War II military service. 20 FP boys - fathers were not in the service.	SES controlled	Scholastic Aptitude Test Terman-Miles Attitude Interest Strong Vocational Interest	FA males had lower math (668 vs. 716) higher verbal (701 vs. 653) SAT scores than did FP males. FA males displayed significantly more "feminine" interests than FP males FA had significant lower masculinity score (39.6 vs 43.0) than FP group.
CHAPMAN (1977)	96 male and female college students at University of Virginia.	16 males and 16 females in each of 3 family groups: father-absent, stepfather and intact. FA = experienced FA before age 18 for at least 2 years. Absence due to death or divorce.	Sex	Scholastic Aptitude Test	FA males received lower SAT scores than FP males. Differences were significant for SAT total, and verbal but not significant for quantitative. Scores for males with stepfathers fell between those of FA and FP groups. No significant differences due to reason for FA (death or divorce) Females from intact family groups scored lower on SAT scores than other groups. Females in stepfather families scored (significantly) higher on achievement than FA females. Stepparent family females with opposite sex siblings scored lower (significantly) on verbal tests than those with same-sex siblings. (566 vs. 665.)

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
CLARKE (1962)	44 3rd grade boys in 10 suburban public schools.	22 FP 22 FA (7 FA death (9 FA divorce (6 FA separation	None	It Scale California Achievement Test	FA boys scored significantly lower on It scale. FA boys scored higher on achievement test than FP boys, although differences were not significant.
COLEMEN, CAMPBELL, HOBSON, McPARTLAND, MOOD, WEINFIELD AND YORK, 1966; SMITH, 1972	National probability sample of children in Grades 6, 9, and 12	Mother and father presence studied.	Statistical control for parents' education, items in home.	Verbal achievement.	Presence or absence of mother or father accounted for little of variance in achievement for blacks and whites but was more important for other minorities.
COLLINS (1970)	300 black children in grades 4, 6 and 8 in 5 schools in Harlem. 100-4th grade 100-6th grade 100-8th grade	In each of the 3 grades, there were: 25 intact family boys 25 intact family girls 25 broken family boys 25 broken family girls Parent absent for at least 3 preceding years. Reason not specified.	Sex, grade in school.	SRA Primary Mental Abilities.	Sex differences in SRA scores significant at 4th grade level only with females scoring higher than males. No significant difference in reading and arithmetic between intact and broken family groups at 3 grade levels. IQ: Intact family children scored significantly higher in 4th grade only.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
CORTES AND FLEMING (1968)	70 black boys in Grade 4 from low-income metropolitan area.	35 F never absent for more than 2 weeks at a time. 35 FA for 3-5 years, mother not re-married, no other adult in home.	Fathers in semi-skilled or unskilled jobs.	Kuhlmann-Anderson IQ Test Stanford Achievement Test	No significant differences between groups.
CROSCIMBENI (1965)	184 boys and girls in grades 2-6 in Connecticut. One-child families.	53 boys)living)with 1 39 girls)parent 53 boys)living)with two 39 girls)parents Some children were more recently father-absent than others.	Age, IQ, sex, grade level, school, teacher, SES, standardized achievement test level.	MAT given in two consecutive years.	Significant differences between family groups favoring intact family children for both years. OT tests (M = .9 years for 1st test; M = 1.0 years for 2nd test) Differences were largest for children in divorced families, followed by death, then absence due to desertion and separation
DEUTSCH (1960)	170 black girls and boys in grades 4-6 from low-income area.	Both parents present One parent present or child lives with relatives.	None	Digit Span, SAT Stanford-Binet Test	Children in two-parent families had significantly higher SAT reading, arithmetic, and total scores, and higher (though not significant) Digit Span scores.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
DEUTSCH AND BROWN (1964)	440 black and white male and female 1st and 5th grade urban public school children in lower or middle-class families.	123 FA 317 FP Higher frequency of broken homes in black group.	Race, grade level, social class.	Lorge-Thorndike IQ	5th grade IQ did not differ significantly from 1st grade IQ. Significant differences between IQ of black and white children, favoring white children. Within black group, IQ of FP children was higher than FA group. For combined race groups, FP children scored significantly higher than FA children (M = 7 points). No data reported on FA effects within group of white children. Black children scored lower at each SES level. Black-white differences increased at each higher SES level. No effects of FA found in 60 black 5th graders in middle-income group. Sex and grade not significant factors.
DOUGLAS, ROSS AND SIMPSON (1968) Cited in Shinn, 1978:	3,626 British children born in 1946 tested at ages 8, 11, 15	165 FA by death 118 FA consistently away from home 3,343 both parents present	Statistical control for SES, family size, housing, standards of maternal care.	IQ and achievement	FA due to death had negative effects only if death followed prolonged illness. Scores for children whose fathers were away deteriorated .16 SD units for girls and .14 SD for boys between ages 8 and 15.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
EDWARDS AND THOMPSON (1971)	2,611 9-year old children in Aberdeen tested at age 7.	140 FA 2,471 FP	Social class	Non-verbal intelligence test.	FA children scored lower, but effect disappeared when social class was taken into account.
ESSEN Note 1	8,823 boys and girls born in March, 1968, from the British longitudinal study by the British National Children's Bureau. Analysis of 16-year follow up study.	One-parent mother, one-parent father, and two-parent homes. One-parent families divided into groups by reason for absence (widowed, divorced, other-illegitimacy, etc.) and age of child at time of absence (before or after age 7).	Statistical adjustment made for SES, housing.	Reading and mathematics tests developed by the National Foundation for Educational Research. Administered to children at age 16.	Children in one-parent families scored significantly lower on tests than two-parent family children. However, after adjusting for SES, the differences on mathematics scores were no longer significant and one-parent family children scored slightly higher on reading test. The age of the child at the time of breakup and reason for absence were not significant factors influencing scores. Children in homes with a substitute parent figure received lower test results then those whose parents remained alone. Single parents also had lower aspirations for their children's further education than did married parents.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
FERRI (1976)	10,000 British children born in 1958, tested at ages 7 and 11.	8,900 two-parent 1,100 one-parent	Statistical controls for SES, family size, household, parental aspirations.	Standardized tests constructed by National Foundation for Educational Research.	Children in TP families scored higher on arithmetic at age 11 and increased scores on reading and arithmetic by larger amounts between ages 7 and 11 than children who were FA due to divorce. FA due to death or illegitimacy had no effect. When SES was controlled, effects of FA were small.
FELDMAN AND FELDMAN (1975)	423 black and white families with two children in same jr. high schools in 3 geographic areas: Syracuse, rural W. Va., and upper N.Y. state. 101 - 2 boy families 204 - 1 boy, 1 girl families 118 - 2 girl families	203 FA 220 FP significantly more blacks in FA group. SES was higher for FP group. (37.07 vs. 32.98)	School attended.	IQ - most recent school group test (used mean score of the 2 children)	FA group scored lower on IQ than did FP group although differences were not significant. (101.00 vs. 101.54)

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
FOWLER AND RICHARDS (1978)	120 black males and females in lower-income families in Virginia.	30 FA females 30 FA males 30 FP females 30 FP males FA occurred before 4th birthday and no father in home through 2nd grade.	Sex. Number of siblings did not differ between groups. SES used as covariate.	MRT - at K SRA - 2nd grade	FA children scored lower on SRA than did FP children though differences were not significant. M = .26, - .26) FA males and FA females scored lowest on SRA math and language arts, and reading. No significant differences between FA and FP groups on MRT at K. Differences between reading and math scores were larger for FP males than for FA males. Differences between reading and math scores were larger for FA females than FP females. Reading and math scores for FP females were nearly equal.
FUNKENSTEIN (1963)	40 male Harvard college freshman represented extreme Q-V differences on SAT.	FA during World War II for at least 1 year during first 5 years.	Selected for Q-V differences.	SAT	High Q, Low V majored in mathematics, engineering, or natural sciences. High V, Low Q majored in humanities or social sciences. Largest proportion of FA males in High V, Low Q group; largest proportion of FP in High Q, Low V group.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
GREGORY (1965)	8,495 male and female high school students in Minnesota.	1,025 living with one or neither parent. 7,470 living with both parents.	None	College Entrance Examination Board Aptitude Scores M, V patterns	Proportion of one-parent household males having a verbal score higher than the mathematics score was not significant, except when loss of parent was due to divorce, or if loss occurred before the age of 10 years.
HERZOG (1974)	110 Carib boys aged 6.5 to 15.5 years in three SES groups in Barbados. 32 Low SES 44 Medium SES 35 High SES	47 F lived in homes 4 F deceased 11 F unknown whereabouts 11 boys did not live with M or F 37 lived with M	Duration of father absence noted in analysis.	Chicago IQ, Gates Reading, Reading Arithmetic	Compared to the proportion of FP boys, a larger proportion of FA boys were in the high achievement group for standardized tests.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
HESS, SHIPMAN, BROPHY AND BEAR (1968); HESS, SHIPMAN, BROPHY, BEAR AND ADELBERGER (1969)	81 low-income black pre-school children tested again at ages 6 and 7.	40 FP 41 FA, ADC families	FA had lower income than FP no differences between group in M's age, IQ or education.	Stanford-Binet IQ MRT Lee Clark Reading Readiness	FP children scored higher in IQ and reading tests although differences were not significant for pre-school years.
HETHERINGTON, COX AND COX (1979)	96 pre-school boys and girls from middle-income white families	24 divorced family boys 24 divorced family girls 24 intact family boys 24 intact family girls Children seen at 2 months, 1 year and 2 years after divorce.	Sex, family size SES, onset and time since divorce controlled	WPPSI	No differences on WPPSI at 2 months or 1 year following divorce, but at 2 years, nuclear family children scored significantly higher (M = 106.5, 100.2) At two years, significant subscale differences between groups on block design, mazes, and arithmetic.
ILARDI (1966)	450 black lower - SES children aged 4 years.	2 groups: both parents present from birth versus unstable family (illegitimacy, divorce, death, or desertion.)	Age , SES controlled	Stanford-Binet IQ	Stable family group had higher IQ's. Presence of siblings had no significant effect.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
JAFFE (1966)	8th grade black students in Detroit high school.	FP and employed FA receiving public income assistance	None	Iowa test of Basic Skills IQ	Children in FA, low-SES group, did not perform as well as FP group. (No means reported.)
JENKINS (1958)	43 black children in grades 4-12 in ADC families	22 legitimate children in 10 families 21 illegitimate children in 14 families. Both groups were ADC families, absence of father not reported for each group.	None	IQ	Legitimate children scored higher than other group.
JONES (1975)	60 male undergraduates	30 FP 30 FA FA due to divorce or separation before age 12, for at least 2 years.	Age, SES, number of siblings, race, and grade point average.	Henmon-Nelson Test of Mental Abilities	Males of early father absence showed "feminine" cognitive pattern. Males in late father-absent group had significantly higher scores in verbal and mathematical aptitudes than FP boys.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
KANDEL (1971)	1,683 working-class urban high school adolescents. 20% of these were black students.	FA due to separation or death	None	IQ	A larger number of black and white boys from broken homes were represented in the top quartile of IQ scores than were boys from intact homes. A larger number of black and white girls from intact homes compared to broken homes were in top quartile of IQ scores.
KASDON (1955)	50 superior readers selected from 9 colleges in L. A.	Broken and non-broken homes represented in family back-grounds.	Selected on basis of high Reading scores. No control group, com-pared to study of "normal" college freshmen at Temple University.	Wechsler-Bellevue	Significant differences in incidence of broken homes among groups with higher representation occurring among superior reader group.
KELLER (1964)	5th and 6th grade 86 boys and girls with IQ's above 120, achievers vs. under-achievers.	One-parent compared with two-parent homes.	None	Standardized tests	No significant differences.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
KELLY, NORTH, AND ZINGLE (1965)	262 7th and 8th grade students in 5 junior high schools in Alberta, Canada.	62 males and 69 females from broken homes. 112 were FA, 19 were MA 131 (62 males and 69 females) selected from intact homes. Breakup due to death or separation. Children in broken homes divided into three groups representing the year in school at time of breakup: Preschool = 49 Grades 1-3 = 32 Grades 4-6 = 50	SES used as covariate	Edmonton Reading Test - 6th grade	No significant differences on reading achievement. (Means not reported). Curvilenear relationship found between reading test and time of family breakup with children in grades 1-3 at time of breakup performing lowest. (M = 7.02, 6.33, 7.32) Children in FA (n = 112) did significantly poorer on reading than MA (n = 19) children.
LAMBERT AND HART (1976)	16,000 11-year old children in British National Child Development Study.	Low level of father involvement and temporary absence studied.	Social class, family size.	Reading and Math achievement	Children in families with low levels of father involvement were 10 months behind other children in reading scores and 9 months behind other children in math scores.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
LANDY, ROSENBERG, AND SUTTON-SMITH (1969)	100 working-class female college sophomores	20 FP 20 FA 10 or more years 60 F working night shift in three onset and duration groups.	All F in manual jobs.	ACE: Q, L scores	The earlier the onset of father absence and the longer the duration, quantitative scores decreased, although significant differences were only for complete FA vs. FP groups (.89 SD units). No systematic relation found between length or period of FA and linguistic ability. (Means for L scores not included).
LESSING, ZAGORIN, AND NELSON (1970)	311 boys and 122 girls ages 9-15 referred for diagnostic evaluation.	138 FA due to divorce, or temporary reasons and lasting at least 2 years not necessarily consecutive. 1/3 had father surrogate. 295 FP	SES (2 levels)	WISC	For total sample: FA children scored significantly lower on Block Design, Object Assembly, and Performance IQ. Working Class: FA associated with lower Verbal, Performance and total IQ for both scores (M = 7 points). Middle Income: FA associated with higher Verbal IQ (M = 6 points) and lower Block Design and Object Assembly.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
MACKIE, LLOYD AND RAFFERTY (Note 3) (Cited in Shinn)	199 black boys and girls tested at end of kindergarten and Grade 1.	99 FA 26 F substitute 74 FP - natural father living at home	School	Primary Mental Abilities Test	When mother's educational and child's pre-K educational experience were controlled, FA, type of interaction with natural and substitute fathers and degree of contact with absent fathers were unrelated to performance. (Means not available).
MALMQUIST (1958)	399 Swedish children ages 7-8 years divided into groups of poor, medium and good readers.	Some children from broken homes in sample.	Reading ability groups	Reading Achievement	"Broken homes" was not a factor that was significantly related to reading ability. (Means not reported).
MAXWELL (1961)	205 boys and 87 girls ages 8-13 years attending a psychiatric clinic	FA before or after age 5 due to death or divorce. FP	No central group. Compared with Wechsler's Normal 10.5 year sample.	WISC	FA before age 5 not related to WISC scores. FA after age 5 negatively associated with Picture Arrangement, Vocabulary, Comprehension, Picture Completion, and Coding.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
MCNEAL (1973)	486 junior high students in Arlington City, Va.	243 broken homes where student did not reside with both parents 243 intact homes Reason for broken home status not specified.	IQ, age, sex, school attended	Standardized achievement tests	No significant difference in achievement test scores. (Means not reported).
MUELLER (1975)	314 black and white 3rd grade boys and girls in Head Start.	FA vs FP	2 levels of disadvantage	MAT word analysis	FA had negative effect on word analysis in the more disadvantaged group only.
NELSON AND MACCOBY (1966)	1,956 freshman from Stanford University classes of 1959 and 1960. 1,537 male 419 female	Identified 94 FA where mothers were divorced, separated or remarried. 38 with mothers deceased. 1,824 with both parents living.	None	SAT Q-V scores	Q scores larger than V scores for FP group. Low frequency of FA students with High Q, Low V patterns.
NIELSON (1971)	200 male war orphans at least 18 years old or high school graduates	FA divided into 4 groups according to onset and duration of absence	No information	Otis IQ	No significant differences (Means not available)

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
OSHMAN (1975)	362 male and female college students	79 FP 283 FA due to military service, death, divorce, or separation	Income, parents' education, number of older male siblings.	Scholastic Aptitude Test	Female subjects experiencing FA in 1st five years of life outscored other female subjects on Verbal and total aptitude.
PEDERSEN, RUBENSTEIN, AND YARROW (1973)	55 black male and female inner city infants ages 5-6 months 28 males 27 females	27 mothers in one-parent families 28 two-parent FA due to military service, employment or separation. Assessed degree of interaction between F and infant.	Parent's education, estimated income. SES = poverty to lower middle-income.	Bayley exploratory, problem-solving, and preference for novel stimuli tasks.	FA males, but not females, scored lower on 15 of 16 measures. (Only 3 of these were significant). Amount of F-C interaction correlated with 5 measures. For females, there were no significant relationships between father variables and outcomes.
PETERSON, DeBORD, PETERSON AND LIVINGSTON (1966) (cited in Sinn)	100 black and white 11-year old boys from "racially homogeneous" Nashville schools, achievers vs. underachievers	74 FP 20 FA 6 other	All boys from low-skilled blue collar homes.	MAT Reading Score corrected for Otis IQ	FP positively associated with achievement for blacks and whites although association was significant for the black group only.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
REES AND PALMER (1970)	80 boys and girls from 5 longitudinal projects. Children were tested at ages 6 and 12.	17 boys and 23 girls from homes broken during first 15 years. 17 boys and 23 girls from intact homes. Small sub-sample of children living with father or living with mother.	SES birth order, sex, project and decade of birth.	Stanford-Binet	Compared with children in broken homes, mean IQ scores were higher for intact family males and females at age 6 and 12. M males, age 6 = 117.12, 118.06 age 12 = 116.18, 122.94 M females, age 6 = 110.83, 113.19 age 12 = 109.60, 111.14 Differences were significant for boys at age 12. No indication that living with either parent after breakup made any difference.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
SANTROCK (1972)	343 white predominantly lower-income boys and girls in four high schools and five junior high schools.	286 FA classified by onset and type (death or divorce, separation, desertion) 57 FP	No SES differences between groups.	Otis Quick Scoring IQ (3rd, 6th grades) Stanford Achievement Test (3rd, 6th grades)	FA boys and girls scored lower than FP boys and girls on 3rd and 6th grade achievement, but not IQ. Boys whose fathers died in 1st 2 years of life scored higher than FP boys on 6th grade IQ. Boys in FA divorced group scored lower than FP boys if FA occurred in first 2 years of life on 3rd and 6th grade IQ and 3rd and 6th grade achievement. Achievement scores were related to the onset of FA for boys. Presence of a step-father had remedial effect for boys only.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
SCIARA AND JANTZ (1975)	1,073 black 4th grade girls and boys in 8 Model cities schools in Midwest metropolitan school system.	159 FA females 368 FP females 141 FA males 405 FP males	IQ, sex	MAT in 3rd and 4th grades.	FP children had higher mean reading scores than FA (M = 3.06, 2.80) even when IQ was controlled. No significant sex differences according to family status, but FA males and females scored lower on reading than their FP male and female counterparts. FP associated with higher achievement particularly for females (.4 years) and for students with IQ's above 100 (.9 years).

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
SOLARI (1976)	926 male and female students enrolled in 2 elementary schools in Detroit, Mich.	Correlated Grades 1-6 achievement scores with one-parent family status. SES, race not specified.	Sex	Stanford Achievement Test Iowa test of Basic Skills	Students from two-parent families scored significantly higher in reading achievement at Grades 5 and 6, and in math in Grade 5. Two-parent boys scored significantly higher than one-parent boys in Grade 2 arithmetic, but there were no other significant differences for boys in family groups in other area (Means not reported). Girls in two-parent families scored significantly higher in reading at Grade 6, arithmetic at Grade 1, and math problems at Grade 6.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
SOLOMON, HIRSCH, SCHEINFELD, AND JACKSON (1972)	149 urban black ghetto 5th grade children	83 both parents present 21 mother and step-father 25 mother only 20 other (foster care or living with relative)	Birth order, family size, sex. No differences between girls and boys on IQ scores.	California Achievement Test Lorge-Thorndike Verbal - Non-verbal IQ Kuhlman-Anderson IQ	Children in two-parent homes scored higher on achievement tests compared with mother-only and mother and step-father families (M = 38.45, 36.34 and 37.58) and slightly lower than those in "other" family arrangements. (M - 38.88). None of these differences were significant.
STETLER (1959) (Cited in Shinn, 1978)	584 white and black female students from racially integrated Connecticut junior high schools	385 two-parent 199 one-parent or lives with relatives	None	Otis-Beta Mental Ability Test and other IQ tests	Students living with both parents had higher IQ's than those living with only one parent or other relatives. (for blacks M = 5.9 points for whites M = 4.3 points)

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
SUTTON-SMITH, ROSENBERG AND LANDY (1968)	1,055 middle and lower-middle income male and female college sophomores at Bowling Green State U.	760 FP 295 FA for at least two consecutive years divided into groups according to period and age of child at time of separation. FA due to military service in age 1-4 period of FA. FA due to divorce in other periods.	Family size, sex, sex of siblings No SES differences between groups.	ACE	FA group scored significantly lower on quantitative, linguistic, and total test scores than did FP group. Having an older sibling diluted the effect of FA so that Q, L, and T scores for FA second borns were not significantly different from FP subjects. The age of the child at the time of FA had a significant effect on achievement, particularly when absence occurred during middle childhood. (ages 3-7) There were no significant effects due to number of years of FA for either males or females. (Means not reported) Effects of FA were greater for males, students with larger families, and students with opposite sex siblings.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
SUTHERLAND (1930)	1,239 Edinburgh children	123 FA due to war deaths in many cases 116 FP	Number of siblings, school, class	IQ, Northumberland No. 1	FP children scored higher on IQ test regardless of the number of children in the family. (M = 4.4 IQ points
	Sample 2: working-class children aged 11-13	724 FA 581 FP	All families semi-skilled occupations	Moray House Group Test of IQ	FP children scored higher (M = 4.4 IQ points)
THOMAS (1969)	92 male college-age war orphans selected from counseling files at Veteran's Administration Office in Louisiana.	Groups based on type of father figure in the home. Active F figures (step-father or father deceased less than 5 years) FA more than 5 years and no stepfathers.	No control group of FP children	Otis Quick Scoring IQ	War orphans with active father figure or father deceased less than 5 years achieved significantly higher IQ scores.

Table 2: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
WILLERMAN, NAYLOR AND MARIANTHOPOULOS (1970)	88 male and female 4-year old children from interracial matings	22 with white unmarried mothers 39 with white married mothers 7 with black unmarried mothers 20 with black married mothers Reason for one-parent family not specified. Married mothers married during pregnancy.	No differences in maternal education for married and unmarried groups.	Stanford-Binet IQ	IQ scores for children were highest in married white mother group, followed by white unmarried mother group, black married mother group, and black unmarried mother group. (M = 102.3, 98.5, 97.6, 82.6, respectively) Unmarried black mother group of children more adversely affected than unmarried white mother children.
WILSON (1967)	Probability sample of 746 lower-income white and black junior and senior high students in California.	552 FP 194 FA	Statistical control for SES	Grade 1 - California Test of Mental Maturity 6th Grade - Stanford Achievement reading 8th Grade Differential Aptitude Verbal Ability	When sex, race, mother's supervision, objects in home, and number of siblings were controlled, FP and FA students did not differ on any measure. (Means not available)

Note: ACE = American College Entrance Examination, ADC = Aid to Dependent Families, Bayley = Bayley Test of Infant Development, C = Child, F = Father, FA = Father-absent, FP = Father-present, GPA = Grade point average, L = Linguistic, M = Mother, MA = Mother-absent, MAT = Metropolitan Achievement Test, MRT = Metropolitan Readiness Test, M-V = Math-verbal difference score, Q = Quantitative, Q-V = Quantitative-verbal difference score, SAT = Scholastic Aptitude Test, SB = Stanford-Binet Intelligence Scale, SF = Stepfather, SES = Socioeconomic status, SRA = Science Research Associates, V = Verbal, WPPSI = Wechsler Preschool-Primary Intelligence Scale for Children, WISC = Wechsler Intelligence Scale for Children.

Table 3

Research Synthesis of One-Parent Household Status and Standardized Tests of Aptitude and Ability

Note: OP = one-parent household FP = father-present
TP = two-parent household (s) = no means were reported, only significant findings
FA = father-absent

Hypothesis: Children from one-parent homes receive lower scores on tests of IQ and aptitude than do children in two-parent homes (OP<TP).

Study	Direction of Difference	Sign
Broman et al. (1975)	OP<TP	+
Carlsmith (1973)	OP = TP (males)	0
Chapman (1977)	OP<TP (males)	+ *
	OP>TP (females)	-
Collins (1970)	OP<TP	+
Cortes & Fleming (1968)	OP<TP	+
Deutsch & Brown (1964)	OP<TP	+
Douglas et al (1968)	OP<TP	+
Edwards & Thompson (1971)	OP<TP	+
Feldman & Feldman (1975)	OP<TP	+
Herzog (1974)	OP>TP	-
Hess et al. (1969)	OP<TP	+
Hetherington et al (1979a)	OP<TP	+ *1
Ilardi (1966)	OP<TP	+

Table 3 (continued)

Study	Direction of Difference	Sign
Jaffe (1966	OP < TP	+
Kandel (1971)	OP > TP (males)	-
	OP < TP (females)	+
Lessing et al. (1970)	OP < TP Performance IQ	+*
	OP < TP Verbal IQ (lower income group)	+
	OP > TP Verbal IQ (middle income group)	-
Mackie, Lloyd & Rafferty cited in Shinn (1978)	No significant differences	(s)
Maxwell (1961)	No relationship (FA before age 5)	0
	OP < TP (After age 5 on Wisc subtests)	+
Nielson (1971)	No significant differences	(s)
Oshman (1975)	OP > TP (females FA 1st 5 years)	-
Pederson et al. (1973)	OP < TP (males and females)	+ *2
Rees & Palmer (1970)	OP < TP (males & females)	+
Santrock (1972)	OP < TP (FA divorce)	+
	OP > TP (FA death)	-
Solomon et al. (1972)	OP < TP	+
Stetler (1959)	OP < TP	+
Sutton-Smith et al. (1968)	OP < TP	+ *
Sutherland (1930)	OP < TP	+
Thomas (1969)	OP < TP (FA less than 5 years)	+ *
Willerman, Naylor & Myrianthopolous (1970)	OP < TP	+
Wilson (1967)	No significant differences	(s)

* Differences are significant.

Summary: 19 studies report OP < TP.

5 studies report mixed results.

2 studies report OP > TP.

4 studies report no significant differences (means not available).

Conclusions: Although a majority of studies report OP < TP, the differences reported are always small. Several studies have noted that differences are decreased when socioeconomic status is taken into account. Therefore, we conclude that the differences that exist between one- and two-parent household groups of children on aptitude tests are slight.

Footnote: 1. In Hetherington et al.'s study, differences were significant at two years following divorce on certain subscales of WPPSI.

2. Pedersen et al.'s study revealed significant differences between groups for 3 of 16 measures.

Table 4

Research Synthesis of Studies of One-Parent Household Status and Standardized Achievement Tests

Note: OP = one-parent household (s) = no means were reported, only significant findings

TP = two-parent household

Hypothesis: Children from one-parent homes receive lower scores on standardized tests of achievement than do children from two-parent homes (OP < TP).

Study	Direction of Difference	Sign
Clarke (1962)	OP > TP	-
Coleman et al. (1966)	No significant difference	(s)
Crescimbeni (1965)	OP < TP	+ *
Deutsch (1960)	OP < TP	+ *
Essen (1978)	OP < TP	+ 1
Fowler & Richards (1978)	OP < TP	+
Jaffe (1966)	OP < TP	+
Keller (1969)	No significant difference	(s)
McNeal (1973)	No significant difference	(s)
Santrock (1972)	OP < TP	+ *
Solomon et al. (1972)	OP < TP	+

* significant difference between OP and TP groups

Summary: 7 studies report OP < TP

3 studies report non-significant differences

One study supports OP > TP for females

Conclusions: Differences are present, but the overall effect size is small.

Footnote: 1. In the Essen study, significant differences between groups disappeared when controls for socioeconomic status were introduced.

Table 5

Research Synthesis of Studies of One-Parent Household Status and Q-V Cognitive Patterns

Note: OP = one-parent household; TP = two-parent household; FA = father-absent; V = verbal scores; Q = quantitative scores

Problem 1

Hypothesis: Q-V differences in scores of one-parent household groups are larger than those in two-parent groups (OP > TP).

Studies of IQ, Aptitude	Direction of Difference	Sign
Altus (1958)	OP > TP (males)	+
Chapman (1977)	OP > TP (males, females)	+
Carlsmith (1973)	OP < TP (males)	-
Nelson-Maccoby (1966)	OP < TP (males)	-
	OP > TP (females)	+
Studies of Standardized Achievement		
Fowler & Richards (1978)	OP > TP (females)	+
	OP < TP (males)	-

Summary: On IQ and aptitude tests, two studies support and two studies fail to support the hypothesis OP > TP for males. Two studies report OP > TP for females. Only one achievement study supports OP > TP for females and fails to support OP > TP for males.

Conclusions: These studies reveal mixed results. There is not enought evidence to conclude that OP and TP differ. Trends: Q-V differences for females in OP families tend to be larger than for females in TP families.

Table 5 (continued)

Problem 2

Hypothesis: Within OP group, scores on verbal tests will be greater than scores on quantitative test (V > Q).

Studies of IQ, Aptitude	Direction of Difference	Sign
Carlsmith (1973)	V > Q (males)	+
Chapman (1977)	V > Q (females)	+
	V < Q (males)	-
Funkenstein (1963)	V > Q (males)	+
Gregory (1965)	V < Q (males, females)	-
Nelson & Maccoby (1966)	V < Q (males)	-
	V > Q (females)	+
Studies of Standardized Achievement		
Bernstein (1976)	V > Q (males, females)	+
Fowler & Richards (1978)	V > Q (males, females)	+

Summary: For aptitude tests, two studies support and two studies fail to support the hypothesis V > Q for males. Two studies support and one fails to support V > Q for females. All studies use samples from a college or university that generally require a minimum total aptitude, suggesting that by definition a lower quantitative score must be balanced by a higher verbal score. For achievement tests, there are only two studies, both of which support the hypothesis V > Q for males and females.

Conclusions: These studies show mixed results. Problems associated with the use of selective samples in the studies of aptitude and the small number of studies using tests of achievement provide too little evidence to conclude that OP and TP differ.

Table 5 (continued)

Problem 3

Hypothesis: Children in OP groups receive lower scores on quantitative tests than do children in TP groups (OP < TP).

Studies of IQ, Aptitude	Direction of Difference	Sign
Carlsmith (1973)	OP < TP (males)	+
Chapman (1977)	OP < TP (males)	+
Collins (1970)	No differences	(s)
Jones (1975)	OP < TP (early FA males)	+
	OP > TP (late FA males)	-
Landy et al. (1969)	OP < TP (females)	+
Lessing et al. (1970)	OP < TP (males)	+
	OP > TP (females)	-
Sutton-Smith et al. (1968)	OP < TP (males, females)	+
Studies of Standardized Achievement		
Blanchard & Biller (1971)	OP < TP (High FP males)	+
	OP > TP (Late FA males Low FP)	-
Deutsch (1960)	OP < TP (males & females)	+
Essen (1978)	OP < TP	+
Ferri (1976)	OP < TP (males & females)	+
	(Effect is small when SES controlled)	
Fowler & Richards (1978)	OP < TP (males & females)	+
Lambert & Hart (1976)	OP < TP	+
Solari (1976)	OP < TP (males, females)	+

Summary: For tests of IQ and aptitude, five studies support the hypothesis OP < TP for males (one of these for early FA only). For females, two studies support and one fails to support the hypothesis OP < TP. For tests of achievement, six studies report OP < TP for males. Only one study fails to support the hypothesis OP < TP for late FA males compared to high-present FP males. No studies fail to support OP < TP for females.

Conclusions: For IQ and aptitude tests, OP < TP for males ($p < .01$). The results are mixed for females and there is not enough evidence to reject the null hypothesis OP = TP for females. For achievement tests, OP male and OP females score lower than the TP groups on quantitative tests. Several studies report that the effects of one-parent status are small when adjustments are made for socioeconomic status.

Table 5 (continued)

Problem 4

Hypothesis 1 (H_1): Children in OP group receive higher scores on verbal tests than (do) children in TP groups (OP > TP).

Hypothesis 2 (H_2): Children in OP group receive lower scores on verbal tests than (do) children in TP groups (OP < TP).

Studies of IQ, Aptitude	Direction of Difference	Sign
Altus (1958)	OP > TP (males)	+
Carlsmith (1973)	OP > TP (males)	+
Chapman (1977)	OP < TP (males)	-
	OP > TP (females)	+
Collins (1970)	No differences	(s)
Jones (1975)	OP > TP (late FA males)	+
	OP ≈ TP (early FA males)	0
Lessing et al. (1970)	OP > TP (females and mid-income groups)	+
	OP < TP (boys and low-income groups)	-
Maxwell (1961)	OP > TP Fa (after age 5, males, females)	+
	No differences FA before age 5, males and females	(s)
Oshman (1975)	OP > TP (females)	+
Sutton-Smith et al. (1968)	OP < TP (males, females)	-
Studies of Standardized Achievement		
Birnbaum (1966)	No differences (males)	(s)
Blanchard & Biller (1971)	OP > TP (high FP males)	+
	OP < TP (low FP and late FA males)	-

Table 5 (continued)

Studies of Standardized Achievement	Direction of Difference	Sign
Camara (1979)	OP<TP (males, females)	-
Deutsch (1960)	OP<TP (males, females)	-
Essen (1978)	OP<TP (when SES adjustments are made, OP>TP)	+
Ferri (1976)	OP<TP (when SES controlled, effect is small)	-
Fowler & Richards (1978)	OP<TP (males, females)	-
Hess et al. (1969)	OP<TP	-
Kelly et al. (1965)	OP<TP (males, females if breakup during Gr. 1-3)	-
	OP>TP (males, females if breakup during Gr. 4-6)	+
Lambert & Hart (1976)	OP<TP	-
Malmquist (1958)	No significant relation to reading	(s)
Mueller (1975)	OP<TP in more "disadvantaged" group	-
Oshman (1975)	OP>TP (females FA for first 5 yr.)	+
Sciara & Jantz (1975)	OP<TP (males, females)	-
Solari (1976)	OP<TP (males, females)	-

Summary: For IQ and aptitude tests, 4 studies support H_1 for males (2 of these for late FA conditions). Three studies support H_2 for males. Four studies support H_1 for females; 1 study supports H_2 for females.

On tests of achievement, 4 studies support H_2 for groups of children in studies where means for separate sex groups were not provided. Five studies support

Table 5 (continued)

H_2 for groups of male and female children; one study supports H_1 for groups of male and female children when adjustments are made for socioeconomic status; and one study supports H_1 for early father-absent female children. One study finds mixed results depending upon the degree of father presence and onset of FA.

Conclusions: For IQ and aptitude tests, there are mixed results for OP males. There is not enough evidence to conclude that OP and TP differ for males. OP females > TP females on tests of verbal aptitude ($p < .19$, all but one of five studies support H_1: OP > TP).

For achievement tests, there is evidence to support H_2, that children in one-parent groups receive lower scores on verbal tests than do children in TP groups ($p < .01$, when the 9 studies reporting negative effects are compared with 1 study reporting positive effects; $p < .11$, when the 5 studies reporting negative effects for males are compared with 1 study reporting positive effects; and $p < .23$, when 5 studies reporting negative effects for females are compared with 2 reporting positive effects.)

Table 6: Father Absence, Field Independence and Analytic Thought

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
BARCLAY AND CUSUMANO (1967)	40 male adolescents, M age = 15.43	10 FA white 10 FA black 10 FP white 10 FP black	Individuals matched on age, grade point average, IQ and SES	4 Rod & Frame Tests (Witkin) Gough Femininity Scale Semantic differential rating of similarity of self to mothers and fathers.	Black boys were significantly more field dependent than white boys. FA boys were significantly more field dependent than FP boys, regardless of race. FA boys received higher femininity scores than FP boys, although differences were not significant.
CAMARA (1980)	32 white children from middle income homes in California suburbs. Children aged 9-11 years	8 divorced family boys 8 divorced family girls 7 intact family boys 9 intact family girls Divorced families separated for 2-3 years; both parents working. Mothers with custody and not remarried. Divorced fathers remained in contact with children.	School attended race, SES, duration and onset of absence controlled factors.	CEFT	Mean scores for divorced and intact family groups were equal. Boys had slightly higher field dependent scores than did girls (approximately 2 points) in both intact and divorced groups.

Table 6: Father Absence, Field Independence and Analytic Thought

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
CHAPMAN (1977)	96 male and female college students at U. Virginia	16 FA males 16 FA females 16 step-father (SF) males 16 SF females 16 intact family males 16 intact family females	None	EFT Scholastic Aptitude Test	FA males were more field dependent than other groups, followed by SF males and intact family males. FA females were only slightly more field dependent than FP females, but females in SF families were more field independent than those in FA or FP groups.

Table 6: Father Absence, Field Independence and Analytic Thought

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
GOLDSTEIN AND PECK (1973)	181 predominantly lower-income family black, Puerto Rican and white children aged 8-15 years and their mothers making initial visit to a child guidance clinic.	41 Black females 69 Black males 11 Puerto Rican females 29 Puerto Rican males 14 White females 17 White males FP = any adult male living in household for 6 months or longer. FA reasons not specified.	None	Portable RFT administered to mothers and children.	Child's age partialled out in analysis. Significant correlation between M-C scores on RFT for total group and significant correlation for males and females, but only significant for black males and females and white males when divided into ethnic sub-groups.
HETHERINGTON, COX AND COX (1979)	96 pre-school children from middle income white families	24 divorced family boys 24 divorced family girls 24 intact family boys 24 intact family girls	Race, SES onset and duration of separation controlled	EFT WPPSI administered at 2 months, 1 year and 2 years following divorce.	Intact family children scored significantly higher on block design, mazes and arithmetic than did divorced family children 2 years after divorce. No difference on EFT scores.
MAXWELL (1961)	292 children aged 8-13 years 205 boys 87 girls all referred to psychiatric clinic for behavioral problems.	Paternal absence due to death, divorce, separation	None - no control group	WISC (complete scores)	Paternal lack after age 5 negatively associated with Picture Arrangement, Vocabulary, Comprehension, Picture Completion and Coding. Paternal lack before age 5 not associated with test scores.

Table 6: Father Agsence, Field Independence and Analytic Thought

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
MERTZ (1976)	Purposively selected 20 most field-dependent and 20 most field-independent male Black Carib children measured by EFT. Boys were approximately 8th graders.	FP = adult male lived in household for at least 6 consecutive months. Correlated length of time F or F-figure was present with test scores. No information provided on number of FA families.	None	EFT Witkin's Human Figure Drawing, Picture Completion (WISC), and Block Design (WISC)	No apparent relationship between length of time a father was in the household and level of differentiation.

Note: CEFT = Children's Embedded Figures Test, EFT = Embedded Figures Test, F = father, FA = father absent, FP = father present, M-C = mother-child, WISC = Wechsler Intelligence Scale for Children, WPPSI = Wechsler Preschool-Primary Intelligence Scale for Children, SES = socioeconomic status, SF = stepfather.

Table 7: Father Absence, Creativity, and Flexible Thinking

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
ALBERT (1971)	19 "exceptionally gifted" children with IQ's above 180, other gifted children.	One-parent vs. two-parent homes.	None	IQ	Gifted and exceptionally gifted children were unusually apt to have lost a parent before adulthood.
BECKER (1974)	60 undergraduate college students at City College of New York	20 FA before age 12 due to death, divorce or abandonment. 20 FP with mother seen as stronger influence than father. 20 FP with father seen as stronger influence than mother.	None	Unusual Uses Test (tin case): measures of fluency, flexibility, and originality.	FP - F-influenced group scored lowest on all three meaaures. FA and FP - M-influenced groups were more fluent, flexible, and more capable of producing ideas than FP - F-influenced group.
EISENSTADT (1978)	699 individuals (20 women and 679 men) listed in Encyclopedia Americana as having made important contributions (at least 1/2 page written about each). Of these, parental information was available on 573 individuals.	Traced incidence of parental loss.	None	Purposive selection of individuals displaying "genius."	High incidence of parental loss through death or separation among individuals with extra-ordinary creative talents.

Table 7: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
SCHOOLER (1972)	3,101 men employed in civilian occupations in U.S.	Analyzed family backgrounds. MA or FA due to death or divorce.	None	Hypothetical incidents measuring ideational flexibility by individual's responses to analyzing economic or social issues. Witkin's (1962) differentiation complex color design task. Goodenough's Draw a Figure Test.	When age, religion, family size and maternal employment was controlled, less ideational flexibility was displayed by males who experienced father loss, particularly when due to divorce. Males raised in homes with no male adults showed more emotional overcontrol and rigidity of attitude than FP males. Males raised in one-parent male-headed families were not less ideationally flexible than the general population, but showed less trust and greater anxiety.

Note: F = father, FA = father-absent, FP = Father-present.

Table 8: Parental Absence and Children's Academic Achievement Measured by Teacher Evaluations.

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
ATKINSON AND OGSTON (1974)	70 white boys aged 8-16 from low-income families	30 FA 40 FP	None	GPA	No significant differences (Means not available.)
BIRNBAUM (1966)	180 boys enrolled in Los Angeles schools.	90 broken home mother-headed 90 intact	Upper and lower income SES groups for both family types. Upper income > $6,600/yr; lower income < $6,600/yr.	GPA	No significant differences in GPA between broken and unbroken homes or between lower and upper income groups.
BLANCHARD AND BILLER (1971)	44 white 3rd grade boys from working and lower middle-income families.	11 FA before age 5 11 FA after age 5 11 low-father present (FP) (<6hr./week) 11 high FP (> 2 hr./day) FA due primarily to divorce or separation.	Age, IQ, SES, presence of male siblings.	GPA	Academic performance of the high father present group was superior to other three groups and significantly higher than FA group.

Table 8: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
BROWN (1980)	5,286 elementary school students and 3,270 high school students in 15 midwest schools. Mixed ethnic and racial groups.	One and two-parent groups compared within low-income categories and overall. Secondary: 2,780 two-parent 457 one-parent 33 other (living in foster care or with relative). Elementary: 4,017 two-parent 1,110 one-parent 159 other One-parent group includes widowed, divorced, separated, and unmarried parents. Two-parent group includes those in which student is living with both natural parents or one natural parent and a stepparent. Low income status assigned to children participating in free or reduced price lunch program.	SES comparison for low income included.	Used GPA to form 3 goups of Achievers: High, Average, and Low.	Data reported in bar graphs representing proportions of students falling into achievement categories. Actual number of students is not presented. Percentage of one-parent family students increases monotonically from high to average to low achievement groups. In other words, within the group of one-parent families, a larger number fall into the low achievement category than fall into average or high categories. This is true for both elementary and secondary levels. The reverse is true for elementary and secondary school children in two-parent families with the highest proportion of two-parent children falling into the high achievement category followed by average and low achievement categories. For elementary school children in low income families, the pattern is similar although differences between the proportions are greater. A greater percentage of two-parent low-income family children fall into the high achievement category, compared to two-

Table 8: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
BROWN (con't)					parent children falling into average and low achievement categories. The reverse pattern is true for low-income one-parent family children in elementary schools. Differences among high school students are less dramatic in both the high and low achievement areas. Within the group of low-income secondary children in TP families, a larger proportion of children fall into the average achievement group, followed by low and high achievement groups. Differences in proportions are 6 percentage points or less. Within the group of one-parent low income secondary school children, the largest proportion of children fall into the high achieving group followed by low and average categories. Differences in proportions are 4 percentage points or less. In a subsequent analysis of data including 7,355 elementary and 10,889 secondary students, significant differences were

Table 8: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
Brown (con't)					found in GPA scores of two- and one-parent groups in elementary and secondary schools favoring the two-parent group. A significantly larger proportion of students in one-parent families participated in the school lunch reduced price program in both elementary and secondary levels.
COLLINS (1970)	300 black children in Grades 4, 6, and 8 in 5 Harlem schools. 100 - 4th grade 100 - 6th grade 100 - 8th grade	In each of 3 grades: 25 intact family boys 25 intact family girls 25 broken family boys 25 broken family girls Parent absent for at least 3 preceding years. Reason not specified.	Sex, grade in school.	Teacher-rated achievement.	No significant differences between family group on reading; significant differences for 6th grade mathematics favoring intact family group.

Table 8: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
FELDMAN AND FELDMAN (1975)	423 black and white families with two children in same junior high schools in 3 geographic areas: Syracuse, West Virginia, and Upper New York State. 101 - 2 boy families 204 - 1 boy, 1 girl families 118 - 1 girl families.	203 FA 220 FP Significantly more blacks in FA group. SES was higher for FP group.	School attended.	GPA over 2 years.	Significant differences between FA and FP groups on GPA. (M (FA) = 2.32; M (FP) = 2.44.)

Table 8: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
HERZOG (1974)	110 Carib boys aged 6.5 to 15.5 years in three SES groups in Barbados 32 Low SES 44 Medium SES 34 High SES	47 F lived in homes 4 F deceased 11 F unknown whereabouts 11 Boys did not live with M or F 37 lived with M	Duration of FA noted in analysis	Marks received by boys in teacher-constructed exams. Standardized tests.	A larger proportion of FP boys were in high scoring groups for all 3 teacher graded exams. A larger proportion of FA boys were in high scoring groups for standardized tests. FA children did better on standardized achievement tests than they did on teacher graded exams. Teacher ratings were not highly related to test scores.
HESS, SHIPMAN, BROPHY AND BEAR (1968); HESS, SHIPMAN, BROPHY, BEAR, AND ADELBURGER (1969)	81 low-income black preschool children tested again at ages 6 and 7.	41 FA, ADC families 40 FP, no financial dependency	Income differences between FA and FP groups; no differences between groups in mother's age, IQ, or education.	GPA	FP children received better grades in all subjects (5 out of 14 represented significant differences: 1st grade writing and 2nd grade arithmetic, spelling, speaking, and science).

Table 8: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
JAFFE (1966)	8th grade black students from Detroit.	FP with F employed FA family receiving public assistance.	None	Grade failures.	Children in FA, low SES group did not progress academically as well as FP group. Higher incidence of grade failures in elementary and junior high grades 7B, 7A, and 8B among FA students than found in group of FP students.
JENKINS (1958)	43 black children in grades 4-12 in ADC families.	22 legitimate children in 10 families 21 illegitimate children in 14 families Both groups were ADC, families; absence of father not reported for each group.	None	Teacher's rating academic grades, GPA	Illegitimate children scored consistently lower in GPA particularly in grades 7-12. Teachers' ratings achievement of illegitimate children were lower than legitimate group (M = 7.5 points).
KANDEL (1971)	1,683 working class urban high school adolescents. 20% were black students.	FA due to separation or death.	None	Proportion of children in top quartile of class in GPA.	Consistently more black and white children from intact families found in top quartile of class with exception of black boys.

Table 8: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
KELLER (1969)	86 5th and 6th grade boys and girls with IQ's above 120, achievers vs. underachievers.	One-parent compared with two-parent homes.	None	Teacher's Evaluation of Pupil Checklist. Parent's Evaluation of Pupil Checklist.	Significant differences in teacher and parent evaluations of children in one-parent and two-parent homes favoring two-parent family children.
KITANO (1963)	299 boys and girls in grades K-5.	214 two-parent 85 one-parent	All from schools in lower-middle income community.	GPA	No significant differences. (Means not available.)
MACKLER (1975) (Cited in Shinn, 1978)	454 Harlem elementary and high school students.	No information.	Sex, age.	GPA	FA was unrelated to school performance. (Information on means not available.)
MCNEAL (1973)	486 junior high students in Arlington City, Virginia.	243 broken homes 243 intact homes Reason for broken home status not specified.	IQ, age, sex, school attended.	GPA	Children in intact families received significantly higher grade point averages.

Table 8: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
SANTROCK AND WOHLFORD (1970)	45 predominantly lower-income boys in grade 5.	15 FP 15 FA due to divorce, desertion, or separation 15 FA due to death. Onset of absence divided into 4 age groups; no stepfather.	Age, IQ, school, grade.	GPA	Onset of FA related to verbal and overall grades, with the 3-5 year onset group doing better than 0-2 and 6-9 groups.
SHELTON (1969)	162 male and female junior high students in Sioux City, Iowa.	81 two-parent 81 one-parent Divided into groups according to age at onset of dissolution.	Sex, Otis IQ used as a covariate.	GPA	Children in two-parent groups received significantly higher GPA's for academic and non-academic subjects. Boys in two-parent homes scored significantly higher than boys in one-parent. Girls in two-parent scored higher than girls in one-parent, although differences were not significant. Boys in one-parent group received significantly lower GPA's than did girls in one-parent group. Differences between one-parent living with mothers and living with fathers group favored living with mothers.

Table 8: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
SHELTON (con't)					Students whose homes were broken during early primary grades were most adversely affected although differences due to age at time of dissolution were not significant.
SOLOMON, HIRSCH, SCHEINFELD AND JACKSON (1972)	149 urban ghetto black males and females in 5th grade.	83 intact 21 mother and stepfather 25 mother only 20 other (living with relatives or foster care).	None	GPA, IQ, and standardized achievement scores factor analyzed to produce composite achievement score.	No significant differences among family groups, but children in two-parent families scored higher than mother and stepfather and mother-only groups. Children in "other" category scored higher than two-parent children (M = .43 points.)
STETLER (1959)	584 white and black female junior and senior high school students from racially integrated Connecticut schools.	385 living with both parents 199 living with one parent or relatives.	None	GPA Drop-out records.	Living with both parents was positively associated with higher GPA for blacks and with staying in school for both black and white students.

Table 8: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
WASSERMAN (1972)	117 black boys ages 10-15 from families in public housing.	62 FA 55 FP for previous 3 years.	No differences in parents' education or work history. All families in public housing.	Combined scores on GPA and age-grade scores based on students working at or below expected grade level.	A greater number of FP children were represented in the higher achievement levels. As achievement scores declined, number of FA males exceeded FP. Differences were not significant.
WEBB (1970)	412 male and female students in grades 11 and 12.	206 broken homes 206 intact homes	Sex	GPA	Intact family group of children received higher GPA scores than did children in broken homes.

Table 8: (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
WEITZ AND WILKINSON (1957)	506 male college students at Duke University.	253 males falling into categories of: 1. only child status 2. one or both parents deceased 3. parents divorced 4. graduation from private secondary school 5. graduation from private military school 6. two or more of above. 253 males in control group not falling into any categories described. Number of parent-absent or divorced families not specified.	Curriculum studied, general aptitude, reading and math achievement test scores.	Scholastic index of grades at end of 1st semester of college.	Differences favored FP groups when FA was due either to divorce (M = .17 points) or death (M = .10 points).

Note: ADC = Aid to Dependent Children, FA = Father-absent, FP = Father-present, GPA = Grade point average, SES = Socioeconomic status, TP = Two-parent.

a. Actual numbers of children in each category for Brown's study were computed from percentage data published in Brown's report. The number of low-income families in the sample was not reported.

Table 9

Research Synthesis of Studies of One-Parent Household Status and Teacher-Rated Achievement and Grade-Point Average

Note: OP = one-parent status (s)=no means reported, only
TP = two-parent status significant findings

Hypothesis: Children in one-parent homes receive lower scores on teacher-rated achievement (OP < TP)

Study	Direction of Difference	Sign
Atkinson & Ogston (1974)	No significant difference	(s)
Birnbaum (1966)	No significant difference	(s)
Blanchard & Biller (1971)	OP < TP	+ *
Brown (1980)	OP < TP	+ *
Collins (1970)	OP < TP (6th grade mathematics; no significant differences on other measures)	+
Feldman & Feldman (1975)	OP < TP	+ *
Herzog (1974)	OP < TP	+
Hess et al. (1968)	OP < TP	+ *1
Jaffe (1966)	OP < TP	+
Kandal (1971)	OP < TP	+
Keller (1969)	OP < TP	+ *
Kitano (1963)	No significant difference	(s)
Mackler (1975)	No significant difference	(s)
McNeal (1973)	OP < TP	+ *
Shelton (1969)	OP < TP	+ *
Solomon et al. (1972)	OP < TP	+
Stetler (1959)	OP < TP	+

Table 9 (continued)

Study	Direction of Difference	Sign
Webb (1970)	OP < TP	+
Wasserman (1972)	OP < TP	+
Weitz & Wilkinson (1957)	OP < TP	+

* Differences are significant.

Summary: Twenty studies provide data on students from one- and two-parent homes. Of these, 16 studies reported lower academic achievement among children in one-parent homes. Four studies in which means were not available reported no significant differences.

Conclusions: There is striking evidence to support the hypothesis OP < TP. A significant number of studies show depressed teacher-rated achievement among children in one-parent homes ($p < .001$).

Footnotes

1. Hess et al.'s (1968) study reported significant differences in teacher grades for 5 out of 14 subjects.

Table10: Family Structure and Years of School Completed, U.S. Men Aged 21-65 in March 1973

Year of birth	Proportion	Schooling variables: Years of schooling[c]	Schooling variables: Graded schooling[d]	Schooling variables: College education[e]	Cohort means/S.D. Years of schooling
1907-11					9.87/3.74
One-parent family[a]	.177	-.85[f]	-.70[f]	-.15[f]	
Both parents[b]	.823	.20[g]			
Female-headed[b]	.102	-.76[g]			
Male-headed[b]	.075	-1.15[g]			
1912-16					10.55/3.49
One-parent family	.172	-.75	-.65	-.10	
Both parents	.828	.18			
Female-headed	.093	-.52			
Male-headed	.079	-1.24			
1917-21					
One-parent family	.184	-.90	-.71	-.19	11.03/3.42
Both parents	.816	.19			
Female-headed	.111	-.35			
Male-headed	.073	-1.60			

Table 10 (continued)

1922-26					11.45/3.38
One-parent family	.168	-.87	-.64	-.23	
Both parents	.832	.16			
Female-headed	.101	-.57			
Male-headed	.067	-1.11			
1927-31					11.72/3.39
One-parent family	.169	-.71	-.37	-.34	
Both parents	.831	.15			
Female-headed	.105	-.63			
Male-headed	.064	-.93			
1932-36					12.02/3.31
One-parent family	.165	-.78	-.42	-.36	
Both parents	.835	.17			
Female-headed	.105	-.69			
Male-headed	.060	-1.21			
1937-41					12.40/3.01
One-parent family	.171	-.66	-.30	-.36	
Both parents	.829	.16			
Female-headed	.105	-.63			
Male-headed	.066	-.99			

Table 10 (continued)

1942-46					12.76/2.76
One-parent family	.140	-.61	-.24	-.36	
Both parents	.860	.12			
Female-headed	.087	-.57			
Male-headed	.053	-1.04			
1947-51[h]					12.14/2.38
One-parent family	.132	-.56	-.21	-.35	
Both parents	.868	.12			
Female-headed	.086	-.79			
Male-headed	.046	-.85			

[a]Dichotomy indicating whether or not the son lived with "both parents most of the time" up to his sixteenth birthday.

[b]Three mutually exclusive and exhaustive categories of family structure indicating 1) lived with both parents (natural or social) most of time up to age 16, 2) lived with only mother or other female-headed family, or 3) lived with only father or other male-headed family.

[c]Years of regular or formal school completed, 0 through 17+.

[d]Years of primary, secondary school completed, 0 through 12.

[e]Years of post-secondary education completed, 1 through 5.

[f]Coefficients for "broken family" (vs. intact) are net deviations from the cohort means of the various schooling variables, controlling for family head's occupation and education, race, farm vs. nonfarm status, and number of siblings.

Table 10 (continued)

[g] Coefficients for the 3 family structure types (both, female-, male-headed) are gross deviations about the cohort means.

[h] In 1973 this cohort had not entirely completed its schooling; data are to be interpreted with caution.

SOURCE: Occupational Changes in a Generation Survey (Featherman and Hauser, 1978).

Table 11: Occupational Statuses of U.S. Men and Canadian Women by Family History Type

Birth cohort	Family type[a]	Gross deviations[b]	Net deviations[c]
	U.S. Men, 1973		
1947-1951	Both	.79	.08
	Father	-7.17	-2.33
	Mother	-4.08	.41
	$\bar{X}$ = 30.87		
	S.D. = 22.00		
1942-1946	Both	.84	.00
	Father	-5.67	1.04
	Mother	-4.89	-.64
	$\bar{X}$ = 36.23		
	S.D. = 25.16		
	Canadian Women, 1973		
1947-1951	Both	.62	.32
	Father	-4.06	-1.26
	Mother	-3.41	-2.56
	$\bar{X}$ = 43.47		
	S.D. = 12.07		
1942-1946[d]	Both	.49	.29
	Father	-4.22	-1.37
	Mother	-1.74	-1.86
	$\bar{X}$ = 44.59		
	S.D. = 12.78		

[a] Based on whether, for "most of the time up to age 16," respondent lived with 1) both parents, 2) father or other male family head, or 3) mother or other female family head.

[b] Gross deviations from respective cohort means; scales of occupational status for U.S. and Canada are not strictly comparable although they correlate in range of 0.9.

[c] Deviations from cohort means adjusted for effects of family head's education and occupation, sibship size, race (U.S. only), farm background, and educational attainment.

[d] Patterns of gross and net effects of family type for cohorts born between 1907 and 1942 are not displayed but are consistent with patterns displayed in younger cohorts.

Table 12: Age at First Marriage Among Ever-Married U.S. Men and Canadian Women by Family History Type

Birth cohort	Family type[a]	Gross deviations[a]	Net deviations[a]
	U.S. Men, 1973[b]		
1947-1951	Both	.02	-.01
	Father	-.16	.02
	Mother	.05	.10
	$\bar{X}$ = 20.48		
	S.D. = 1.93		
1942-1946	Both	.05	.03
	Father	-.61	-.36
	Mother	-.10	-.07
	$\bar{X}$ = 21.88		
	S.D. = 2.82		
1937-1941	Both	.02	-.01
	Father	-.28	-.10
	Mother	.01	.14
	$\bar{X}$ = 22.63		
	S.D. = 3.96		
	Canadian Women, 1973		
1947-1951	Both	.17	.15
	Father	-1.48	-1.27
	Mother	-.64	-.59
	$\bar{X}$ = 20.50		
	S.D. = 2.07		
1942-1946	Both	.16	.14
	Father	-1.74	-1.42
	Mother	-.32	-.33
	$\bar{X}$ = 21.53		
	S.D. = 2.81		
1937-1941	Both	.23	.21
	Father	-1.78	-1.50
	Mother	-.41	-.45
	$\bar{X}$ = 21.48		
	S.D. = 3.40		

[a] See notes for Table 11.

[b] Results for Canadian men parallel those for U.S. men.

Table 13: Proportion Married More than Once Among Ever-Married U.S. Men in Relation to Family History Type, 1973

Birth cohort	Family type[a]	Gross effects[b]	Net effects[c]
1947-1951	Both	-.00	-.00
	Father	.05	.04
	Mother	.00	.01
	$\bar{X}$ = .04		
	S.D. = .20		
1942-1946	Both	-.01	-.01
	Father	.11	.10
	Mother	.00	-.00
	$\bar{X}$ = .10		
	S.D. = .30		
1937-1941	Both	-.01	-.01
	Father	.07	.06
	Mother	.02	.01
	$\bar{X}$ = .13		
	S.D. = .34		

[a] See footnote a in Table 4.

[b] Deviations of the category means from the grand mean, $\bar{X}$.

[c] Net deviations of the category means from the grand mean under adjustments for family head's education and occupation, sibship size, race, farm/nonfarm background, years of school completed, and age at first marriage.

Table 14 Children in One-Parent Household: School Behavior and Work Patterns.

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
ATKINSON AND OGSTON (1974)	70 white Canadian male children aged 8-16 years living in low-income area all attending a boys' club	40 FP 15 young 25 adolescent 30 FA 13 young (8-12) 17 adolescent (13-16) FA = no father or adult male in home. Mean age when F left - 46.5 months for younger group and 78.6 months for adolescent group.	None	M ratings of tardiness	FP adolescents and younger children are less likely than FA to be late for school.
				T ratings of participation in extracurricular activities. Detentions.	No difference between FA and FP groups in participation in clubs or sports or detentions.
BIRNBAUM (1966)	180 high school boys forming two groups of upper and lower income families living in L. A.	42 FA upper income (over $6,600/year) 48 FA lower income (under $6,600/year) 42 FP upper income 48 FP lower income	Age, grade, IQ, SES	T grades on work habits and cooperation.	No significant difference in number of "U" marks for broken or unbroken homes.
				Attendance records.	No significant difference in attendance records.
				Participation in athletics, music and student government.	No significant difference in activity participation. (Means not reported)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
BROWN (1980); EVANS AND NEEL (Note 2)	5,286 elementary school children in 9 U.S. states 3,270 high school children in 3 states. Mixed racial groups. SES - Low income determined by participation in free lunch program.	Single-parent children compared with two-parent household children.	Separate analysis for low-income group.	School records of Tardiness Discipline referrals Suspension Student mobility Truancy Title I - special assistance Drop-outs	Significant differences were found between the one- and two-parent elementary and secondary on school behaviors. Compared to those in two-parent families, children in one-parent families were more likely to be absent from school, make more frequent visits to the health clinic, be referred for discipline problems, be suspended from school, and transfer schools more often. Significant differences between family groups were also reported for secondary students with one-parent family children more likely to be enrolled in special education classes, to be expelled from school and drop out of school. There were no differences at the secondary level between family groups for discipline offenses related to alcohol or drugs. For the free-lunch group, only 7 variables remained significantly different suggesting less difference in two- and one-parent family children's school behaviors at low-income levels.

Table 14 (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
CLARKE (1962)	44 3rd grade boys in 10 suburban public schools	22 FP 22 FA (7 FA death (9 FA divorce (6 FA separation	None	Test anxiety	FA boys scored higher (but not significantly higher) than FP boys on test anxiety.
COLLINS (1970)	300 black boys and girls in grades 4, 6, and 8 in 5 parochial schools in Harlem. 100 - 4th grade 100 - 6th grade 100 - 8th grade	At each grade level: 25 intact home - girls 25 broken home - girls 25 intact home - boys 25 broken home - boys "Broken" at least for 3 years preceding study.	Sex	Absence records Teacher ratings of conduct	Intact group had significantly fewer absences than broken family group. No significant differences between family groups on conduct or effort. (Means not reported)

Table 14 (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
FELDMAN AND FELDMAN (1975)	423 junior high students from 2-child families: 101 - 2 boys 204 - 1 boy, 1 girl 118 - 2 girls Three geographical areas: Syracuse, W. Va. and upper N.Y.	203 FA 220 FP in same school More blacks in FA group. Mothers in FA group more apt to be employed than mothers in FP group. SES higher for FP group.	None	Mean score of two children computed on each variable. School drop-out rate C interview: Relation with school C interview: Participation in activity	In FP families, children with less contact with F had higher rate of drop-out than higher interaction F-C families. Number of school drop-outs same for FA and lower interaction FP families. Children with higher degree of interaction with F in FP had more positive relations with school and participated more in school activity.
FERRI (1976)	10,000 British children born in 1958, tested at ages 7 and 11.	8,900 two-parent 1,100 one-parent	Statistical controls for SES, family size, household, parental aspirations	Referrals and participation in special education programs.	Higher proportion of FA and MA students attended special schools than FP students. (Differences were not significant). Twice as many FA and four times as many MA than two-parent were considered by teachers to benefit from special education treatment.

Table 14 (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
FOWLER AND RICHARDS (1978)	120 male and female kindergarten black children in lower income families	30 FA males 30 FA females 30 FP males 30 FP females	Statistical control for SES. No differences between groups on number of siblings.	Teachers completed the Social - Psychological Adjustment Inventory (12 scales, e.g., peer relations, task orientation, attention span, interpersonal relations with adults) combined with Early Detection Inventory and MRT to form a factor of academic readiness.	FP children scored higher on the educational preparation factor than FA, but differences were not significant. Sex by family type interaction was not significant. (Means not reported for sex within family groups.)
GREGORY (1965)	8,495 male and female high school students in Minnesota	7,470 two-parent 1,025 one-parent or living with neither parent.	None	High School completion.	Higher rates of school drop-out among those who lost parent of the same sex by death, divorce and separation and were living with opposite-sex parent.
HAVIGHURST AND NEUGARTEN (1967)	Samples of non-white males selected from 1960 census of school-enrollment.	Both, one, or no parents present in home.	None	High school completion.	Greater proportion of two-parent students graduated from high school; family structure was particularly important for boys compared to girls.

Table 14 (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
HERZOG (1974)	110 boys aged 6.5 to 15.5 years in 3 SES groups in Barbados. 33 Low SES 44 Medium SES 34 High SES	47 F lived in homes 4 F deceased 11 F unknown where-abouts 11 boys did not live with M or F 37 lived with M	Duration of FA noted in analysis	Teacher ratings of Attitude Toward Schoolwork and Behavior in School	Boys whose fathers were absent during all or the later period are more often labelled "lazy" than those with fathers present. Boys in complete FA or early FA families are more likely to be described as "troublesome" than those with fathers present. Teacher ratings were not highly related to scores on achievement tests.
HESS AND CAMARA (1979)	32 white 9-11 year old children from middle income families in California	8 divorced family girls 8 divorced family boys 7 intact family boys 9 intact family girls	Age, grade, school, sex	Teacher and parent ratings of work effectiveness: preparation toleration of delay concentration frustration tolerance Teacher, parent and staff ratings of stress exhibited by child	Significant differences between effectiveness of work styles favoring children from intact families. Boys received lowest scores, particularly those in divorced families. Significant differences in symptoms of stress exhibited by children with those in divorced families being higher-stressed, particularly boys.

Table 14 (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
Hetherington, Cox and Cox (1981)	96 pre-school boys and girls from middle-income white families	24 divorced family boys 24 divorced family girls 24 nondivorced family boys 24 nondivorced family girls Children seen at 2 months 1 year and 2 years after divorce	Sex, family size, SES, onset and time since divorce controlled	Observations of tardiness, social interaction, play and task related behaviors. Teacher and peer ratings. Sociometric measure.	More tardiness in children from divorced families than nondivorced families. Observed disruptions in play and attending and task persistence and an increase in acting out noncompliant, dependent attention seeking behaviors in both boys and girls in the first year following divorce. These effects were most marked for boys. Differences between girls in divorced and nondivorced families had largely disappeared by 2 years after divorce. Although the behavior of boys in divorced families had improved by 2 years after divorce they still exhibited more problems in social and task oriented behavior than boys from non divorced families. Teachers and peers rate boys from divorced families more negatively than girls from divorced families or children from nondivorced families. Girls from divorced famlies are rated as more dependent, withdrawn and anxious, boys as aggressive, impulsive, resistant and lacking in task orientation. Boys from divorced families continued to be rated negatively when

Table 14 (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
					heir observed behavior had improved somewhat at 2 years after divorce. Boys from divorced families have difficulty gaining access to same aged male peer groups and spend more time playing with younger males or girls. Boys from divorced families rated as less popular than all other groups of children sociometric measure at one and two years after divorce.

Table 14 (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
JENKINS (1958)	43 black children in 4th - 12th grades, ADC families	22 "legitimate" birth status children in 10 families 21 "illegitimate" birth status children in 14 families	None	School absence	"Legitimate" birth children had fewer absences.
KELLY, NORTH AND ZINGLE (1965)	262 7th and 8th grade male and female students in Alberta, Canada	131 broken homes: 112 FA 19 MA 131 intact homes	Sex, schools	Teacher ratings of school behavior problems Absence from school	Children from broken homes had significantly more absences. No significant difference in teachers' behavioral ratings between groups. (Means not reported)
McNEAL (1973)	486 junior high students in Va.	243 broken home 243 intact home Broken home = child does not reside with both parents.	IQ, age, sex and school attended	Teacher evaluation of work habits. Participation in extra-curricular activities. Peer evaluation of leadership. Days absent Days tardy	Children in intact families had significantly higher teacher evaluations of work habits. No differences in participation in extra-curricular activities or in peer evaluations of leadership. Children in broken homes were absent and tardy significantly more often than children in intact homes.

Table 14 (continued)

Study	Sample	Family Characteristics	Matching Factors	Dependent Measures	Results
SCOTT (1974)	150 5th grade students from 8 elementary schools in midwest.	50 divorced homes 50 divorced - remarried homes 50 intact homes	None	Daily attendance Self-concept as a learner (The Florida Key) Grade point average and SAT	Significant relation between self-concept and academic status scores for 3 groups combined, but no significant relation between self-concept and achievement for divorced homes. Significant relation between attendance and academic status for intact group only.

Note: C = Child, F = Father, FA = Father-absent, FP = Father-present, MA = Mother absent, SEX = Socioeconomic status, M = Mother, T = Teacher.